

## **PRIOR TO START OF TOUR**

- Notify Facility Managers at 7:30am Plan of Day meeting of Tour and need for Lights in HLWISF, Solvent Storage Terrace Pump Room, PMCRE, PMC, GPC, etc.

## **INTRODUCTIONS**

### **View WVDP Safety video (Tour Guide)**

**Discuss location of Conference Room Emergency Exit and tour logistics (Tours are expected to last approximately 5 hours each, with extensive walking and stair climbing. Participants are requested to dress appropriately for the weather with regard to clothing and footwear.) (Tour Guide)**

## **PRE-TOUR OVERVIEW**

### **Map Slide (read by Tour Guide)**

The West Valley Demonstration Project, commonly called the WVDP, is located on approximately 200 acres of the Western New York Nuclear Service Center. The Western New York Nuclear Service Center comprises 3,300 acres of land originally set aside by the State of New York for a nuclear industrial complex. The WVDP premises were originally used for the commercial reprocessing of spent fuel rods. The WVDP Act of 1980 authorized the DOE to demonstrate solidification of 600,000 gallons of high-level waste left behind at the site by the reprocessing operations. The Western New York Nuclear Service Center is owned by the New York State Energy Research and Development Authority, known as "NYSERDA", with DOE given temporary possession of 200-acres referred to as the "Project Premises" to complete their responsibilities under the 1980 Act. Upon completion of their responsibilities under the Act, DOE will return possession of the 200 acres to NYSERDA.

### **WVDP Act Slide (read by Tour Guide)**

The WVDP Act states that the Secretary of Energy shall carry out the following activities:

- (1) Solidify, in a form suitable for transportation and disposal, the high level radioactive waste at the Center by vitrification or by such other technology which the Secretary determines to be most effective for solidification;
- (2) Develop containers suitable for the permanent disposal of the high level waste solidified at the Center;
- (3) As soon as feasible, transport, in accordance with applicable provisions of law, the waste solidified at the Center to an appropriate Federal repository for permanent disposal;
- (4) In accordance with applicable licensing requirements, dispose of low level radioactive waste and transuranic waste produced by the solidification of the High Level Waste under the project; and
- (5) Decontaminate and decommission, in accordance with Nuclear Regulatory Commission (NRC) requirements, the tanks and other facilities of the Center in which the HLW was stored, the facilities used in the solidification of the waste, and any material and hardware used in connection with the project.

WVDP Act Requirements 1 and 2 above are complete. Requirement 3 cannot be completed at this time. Requirements 4 and 5 are partially complete.

### **WVDP Site Facility Slide (read by Tour Guide)**

This is a diagram of the major facilities on the WVDP. We are currently located here, at the Administrative Building. Our tour route will take us through the Main Plant Process Building, through the support facilities along the east side of the Project, through the Waste Tank Farm, the Remote Handled Waste Facility, the Vitrification Facilities, and then the support facilities to the south of the Main Plant Process Building.

### **Main Plant Slide (read by Tour Guide)**

This is a schematic of the Main Plant Process Building. It shows the general arrangement of the primary cells in the Main Plant Process Building.

### **Facilities not included in tour slide (read by Tour Guide)**

There are several facilities that we will not be seeing on the tour today due to their location or because of access control. These facilities are described in the next several slides.

### **Bulk Storage Warehouse Slide (read by Tour Guide)**

This is a picture of the Bulk Storage Warehouse. It is an industrial facility used for material storage. It is an 80 foot by 163 foot building with steel beam construction and light metal siding and roofing. This facility is located approximately 2.5 miles south east of the Main Plant Process Building.

### **Schoolhouse Slide (read by Tour Guide)**

This is a picture of the School House. It is located approximately 0.5 mile south of our current location, just off of Rock Springs Road. It was originally a one-room schoolhouse and residence. Nuclear Fuels Service and the WVDP used the schoolhouse as an environmental and bioassay sampling program laboratory; office space, sample storage area; and a training classroom. It is currently used as a deer check facility during the deer-hunting season. The program is administered by NYSERDA. It is an 18 foot by 41 foot wood-framed building with a shingled roof. It has a septic system that includes a concrete tank and distribution box.

### **Reservoirs and Dams Slide (read by Tour Guide)**

These are overhead photos of Lake 1 and Lake 2. The lakes and their associated earthen dams provide surface water control and supply the site's water system. The south reservoir, known as Lake 1, has an earthen dam 75 feet high. The north reservoir, known as Lake 2, has an earthen dam 50 feet high. Lake 2 also includes a pump house and transfer lines

### **Firing Range Slide (read by Tour Guide)**

This is a picture of the Live Fire Range. This 400 foot by 100 foot area supports the site security forces. It is also used by the Cattaraugus County Sheriff's Department.

### **CPC-WSA Interior View Slide (read by Tour Guide)**

This is a photo of the interior of the Chemical Process Cell Waste Storage Area, also known as CPC-WSA. We will be seeing this Quonset hut structure today, but due to access control

requirements based on the dose rate of the waste in this facility, we will not be going into this facility today.

### **Visitor Responsibilities Slide 1 (read by Tour Guide)**

We are concerned about your safety and the safety of the workers here on site. We ask you to please obey the following safety requirements:

- Please Look Out for Tripping Hazards, Uneven Surfaces, Water Leaks in the Main Plant, and other Slippery Surfaces.
- Please use Handrails when on stairs.
- Please stay in the walkways at all times and watch for traffic in the roadways
- Please do not touch equipment, piping and controls; especially in radiological areas. Areas in the Main Plant Process Building above 7 feet are considered to be contamination areas.
- Please stay with your escort at all times.
- Immediately discuss any Safety Concerns with the Escort.

### **Visitor Responsibilities Slide 2 (read by Tour Guide)**

- Obey all postings, signs, barriers, and rules.
- Do not lean or reach over ropes.
- Follow your escort's instructions at all times.
- Only enter areas to which you have been granted access.
- No food or drink is permitted in radiological areas. Also, do not apply lip balm, chew gum, etc.

Failure to follow the tour guide's instructions, especially regarding safety, may result in the tour being concluded before completion. The entire group shall return to the entry point in accordance with safety procedures. You may reschedule for a later date.

### **Pre-Tour Instructions (read by Tour Guide)**

Before we head out for the tour, here are some important notes. We will be walking through radiological areas. We will have to pass through numerous Personal Contamination Monitors, or PCMs, when exiting buffer areas. Anything you are hand-carrying will need to be frisked out at each of these locations. With this in mind, please leave all non-essential belongings here. While on tour, do not set your papers, notebooks, writing utensils, cameras, etc. down on any surface within the facilities. If you do so, your item will have to be swipe-sampled by a Radiological Control Technician. You are advised that any personal items that you choose to take with you on the tour may be confiscated if the items become contaminated or are believed to be contaminated. These items may not be able to be returned to you. For your safety, please notify either of the tour guides if you set an item down, or drop an item. Also, do not lean on or touch windows or walls in the facilities, or reach or lean over radiological rope boundaries.

### **Personnel Contamination Monitor Slide (read by Tour Guide)**

We will encounter two types of Personnel Contamination Monitors on this tour. The first kind scans the body from side to side. You should stand sideways and insert your right arm into the

Personnel Contamination Monitor. When the blinking red light near your eye-level stops, remove your right arm, turn, and insert your left arm. When the blinking light stops, a small tone will sound and the message on the screen on the front of the Personnel Contamination Monitor will read "You may pass."

The second Personnel Contamination Monitor scans front to back. You should walk straight into the Personnel Contamination Monitor, insert your right arm in the slot beside you, and turn your face to the right. When the countdown clock reaches zero, you will receive instructions to turn around. Turn your body to face out of the Personnel Contamination Monitor, insert your left arm in the slot, and again turn your face to the right. You will receive instructions to exit when your scan is complete. IF AT ANY TIME ONE OF THE Personnel Contamination Monitors ALARMS, please follow the instructions of the guides and/or radiological technicians.

You should avoid walking in puddles, both inside **and** outside. Puddles inside may be contaminated. Radon is naturally occurring in this area, so walking through outdoor puddles may allow radon to accumulate on your shoes. Radon **will** alarm the Personnel Contamination Monitors.

**Are there any questions on the information so far? (Questions may be answered by the Tour Guide, as appropriate.)**

#### **Contact Information Slide (read by Tour Guide)**

The tours will be scripted tours, in that the guide will provide general basic information from a prepared script. Due to the varying level of knowledge of our volunteer tour guides, questions will not be entertained during the tour. The scripted information is deemed sufficient to provide a working knowledge of the physical site and the responsibilities of DOE with regard to the West Valley Demonstration Project Act. All questions should be submitted to Cathy Bohan via electronic mail to [Catherine.M.Bohan@wv.doe.gov](mailto:Catherine.M.Bohan@wv.doe.gov).

#### **Tour Route (Stops are identified as →)**

- 1. → Exit the conference room and enter the hallway of the Administrative Building.**

##### Administrative Building

We will now begin the tour. The building that you are currently in is the Administration Building. This building is currently used as general office space, the dosimetry lab, and the medical office. The interior is divided into approximately 20 rooms plus an 11 foot 4 inch by 60 foot hallway. The building also includes restrooms and support equipment.

- 2. Enter Main Gatehouse (ensure tour guide has visitors' TLD and ED plus your own TLD)**

- 3. → Move to the east side of the Main Gatehouse to provide the site physical orientation and a general listing of what is to the north and what is to the south.**

To the north are the Main Plant Process Building, waste storage facilities, and support facilities. To the south are the formerly used disposal areas.

**4. → Move to area in front of Main Plant Process Building.**

**Main Plant Process Building**

This is the Main Plant Process Building. This front section, with all the windows, is an office building. It is a three-story structure located adjacent to the west side of the Process Building. The office building is approximately 40 foot wide, 95 foot long, and 44 foot high, and contains offices, men's and women's locker rooms, and 3 stairwells.

**5. Enter Main Plant at main entrance. Inform PSOSS of tour if not done earlier. Move up stairs into Radiological Buffer Area (CVA).**

Please note that we are about to enter a Radiological Buffer Area. As a reminder, do not touch surfaces in this area or drop anything. You also should not chew gum or candy, drink anything, or apply lip balm in this area.

**6. → CVA - Move to north end of aisle. Stop in corner under hatch.**

**Chemical Viewing Aisle**

This is the Chemical Viewing Aisle. Through these windows you can see the High Level Waste Interim Storage Facility, formerly the Chemical Process Cell. Historically this aisle was used to operate Chemical Process Cell coolers, view the cell, load fuel baskets in and out of dissolvers, move equipment in and out of the Chemical Process Cell, and operate the cranes and power manipulator (PAR). It is currently used for general building access for maintenance and surveillance and to house the Personnel Decontamination Room at the end. Walls adjacent to the Chemical Process Cell are 5 foot 9 inch thick. The section above us contains a roof hatch. The windows in this area are lead glass shield windows with mineral oil between the glass plates.

**Chemical Process Cell**

The Chemical Process Cell was historically used for fuel dissolution and waste disposal operations, and later to support High Level Waste vitrification. Now, as the High Level Waste Interim Storage Facility, it is used for the interim storage of High Level Waste canisters, vitrification cell vessels and waste, and head end cell waste stored in drums. The north end consists of one 12 inch thick steel section, and 2 sliding concrete doors to the Equipment Decontamination Room and Chemical Crane Room. High density concrete was used in upper wall portions where the wall was stepped back to accommodate crane rails. There is also a hatch to General Purpose Cell within the cell.

**7. → EDRVA – Move to EDRVA in front of “Green Room.”**

**Equipment Decontamination Room Viewing Aisle**

This is the Equipment Decontamination Room Viewing Aisle. You can view the Equipment Decontamination Room through this shield window. This aisle was used to control and observe operations in the Equipment Decontamination Room and control the Chemical Process Cell crane. It is currently used for general building access for maintenance and surveillance and to house the “Green Room” (located behind me), which is for Radiological Protection Instrument Tech supplies.

**Equipment Decontamination Room**

The Equipment Decontamination Room acted as an airlock to the Chemical Process Cell to remove or replace equipment in the Chemical Process Cell, allowed for some decontamination and hot contact maintenance, and acted as a storage area for remote handling of Chemical Process Cell equipment. The soaking pit, which is located under the built-up floor in the north-east corner of the cell was used to decontaminate equipment with decontamination reagents. The cell now provides these capabilities, as well as access to the Vitrification Cell through the tunnel to the north, and access to the Load In/Load Out Facility through the shield doors to the west. The Load In/Load Out facility is on the other side of that west wall. The room is also currently being used to sort Low Level Waste.

The Soaking Pit is concrete with a stainless steel lining and measures 13 foot 6 inches by 22 foot by 16 foot 3 inches. The Chemical Process Cell door is located in the south wall. This window is a lead glass shield window and is the only window into the cell. The transfer cart rails run north-south on the east side of the cell. The room also holds charging shoes for the battery operated cart that runs on the rails.

- 8. → Move to top of steps leading to COA. Indicate Silver Room at the bottom of the steps while talking.**

#### Silver Room

The Rad Protection Counting Area or “Silver Room” is here. It is used to provide an in-building support area for Rad Protection personnel. It is a temperature-controlled, aluminum paneled room that contains 1 fume hood.

- 9. → Move to COA, just past C-1 Sample Station.**

#### Chemical Operating Aisle

This is the Chemical Operating Aisle. Historically, it has been used to provide access to the Liquid Waste Cell and valves and instrumentation for the Chemical Process Cell (CPC). The High Level Waste Interim Storage Facility (or Chemical Process Cell) is on the other side of the wall to the west. It is currently in use for general building access for maintenance and surveillance, to store contaminated cell models, and to house the C-1 Sampling Station.

#### C-1 Sampling Station

The green structure to your right is the C-1 Sampling Station, sometimes called the Product Sample Cell. The sample station was used to sample vessels in the Chemical Process Cell and Liquid Waste Cell. It is currently used only to sample vessels in the Liquid Waste Cell. It is built into the east wall of the Chemical Process Cell and is only accessible from here. It is connected to the Analytical and Process Chemistry Laboratory Sample Storage Cell by a powered conveyer tray/cart riding inside a 12 inch square stainless steel duct-like chute. The stainless steel chamber inside measures about 10 foot long, 1 to 2 foot high, and is embedded 1 foot into the wall. It is completely surrounded by removable and permanent steel shielding blocks. It contains jets, a central needle block assembly, internal drain, ball-joint hand-operated manipulator, an approximate 12 inch by 8 inch shield window, wrench assembly, sample bottle slide tube, and one light.

- 10. → Move to LXA, adjacent to VWR wall**

#### Lower Extraction Aisle

This is the Lower Extraction Aisle. The Extraction Cells are located behind the wall to the South and the Vent Wash Room behind the wall to the North. This aisle was historically used as an operating and maintenance area with access to pipe and instrument penetrations to the Extraction Cells and Uranium Process Cell. The aisle contains pneumatic instrument transmitters that relayed level, density, and vessel pressure signals to the control room. Additionally, it contains Liquid Waste Treatment System equipment. It is now used for general building access for maintenance and surveillance and storage of contaminated cell models. This steel catwalk runs along the entire length for access to Extraction Cell wall penetrations 8 feet above floor. The aisle also contains thermocouple wiring between cell vessels and the control room and houses utility headers for steam, cooling water, plant air, instrument air, condensate, vacuum and fire water, ventilation supply and exhaust ducts.

**11. → Move further down aisle to a point just south of model storage area.**

This door leads to the Ventilation Wash Room. The door in the back leads to the Ventilation Supply Room. The adjacent door to the East leads to the former Instrument Room.

Ventilation Wash Room

The Vent Wash Room was used to scrub chemical fumes from laboratory hood exhausts, particulate from cell exhausts, and other areas prior to the air entering the main filter plenum. The Vent Wash Room contains an out-of-service air washer and duct work to handle exhaust air from some of the cells, analytical labs, and other plant areas. Water for the air washer was originally circulated by a pump in that shielded niche alongside the wall, that is now out-of-service. The washer catch basin has a drain to the Process Mechanical Cell. There is also a floor drain on the east side of the room that ultimately connects to an interceptor. Internal filters were used to remove particulate and water droplets. Air exhausts through this 36-inch stainless steel duct to the Ventilation Exhaust Cell filter plenum. The duct is highly contaminated, resulting in a high radiation area in this aisle and the Instrument Room in those areas near the duct. Currently, the Ventilation Wash Room acts as a plenum for the Main Plant ventilation system.

Ventilation Supply Room

The Ventilation Supply Room was historically used to house main air intake equipment for the Main Plant Process Building. It formerly contained an Instrument Shop with controlled atmosphere for equipment calibration. It currently houses the main air intake equipment (large air handling unit) and chiller for the Main Plant Process Building, ventilation testing equipment, and miscellaneous suit-up/decontamination supplies. This room and its equipment are related to the Head End Ventilation System.

Instrument Room

The Instrument Room served as an instrument repair area, but is currently empty.

**12. → Move to southeast corner of model storage area so the doors to the East Stairs, PSC-1, and PSC-2 are in view.**

Process Sample Cells (PSC-1 and PSC-2)

Over in that corner you can see the door to the East stairs and, at the very back, the door to the Process Sample Cell-2 Airlock. This door, to the South, leads to the Process Sample Cell-1 Airlock. Process Sample Cell-1 was used to sample the Product Purification Cells. Process Sample Cell-2 was used to sample the Uranium Product Cell, supporting both the Liquid Waste

Treatment System and Sodium Bearing Wastewater Storage. Process Sample Cell-1 is approximately 5 foot by 15 foot by 10 foot including the airlock and contains a glove box. Process Sample Cell-2 is approximately 10 foot by 10 foot by 10 foot including an approximately 4 foot by 5 foot airlock.

We will now proceed into and through the Upper Warm Aisle to the South stairs.

- 13. → Move through east airlock into UWA. Stop at east end of UWA adjacent to crane and before niches.**

#### Upper Warm Aisle

This is the Upper Warm Aisle. It was historically used to shield hot mechanical process equipment likely to require replacement, with a means to flush and access equipment while minimizing radiation exposure. It is now used for general building access for maintenance and surveillance. This aisle contains several concrete pump niches, a solvent filter, and a process hot water tank and strip solution heat exchanger. A hand operated 5-ton bridge crane runs east/west over niches for lifting concrete shield blocks off the niches. There is an airlock at the east end (through which we just passed) that has a stainless steel lined floor. Fixed contamination on the floor and wall in this area may be painted over and/or be covered with new concrete.

We will now proceed up the South stairs to the third floor to the Solvent Storage Terrace and 7D-5 area. As we pass through this door, if you look to the left, you will see a door at the bottom of the stairs. That door provides access to the Off Gas Cell.

- 14. → Move up the South Stairs to the 3<sup>rd</sup> Floor. Turn left (south) on the landing. Go up short flight of steps to the east off the landing to the SST. Enter the 7D-5 room. DO NOT ENTER THE OFF GAS AISLE.**

#### 7D-5

You are standing in the area referred to as 7D-5 in some documents and drawings. It formerly contained Tank 7D-5, provided access to the Solvent Storage Terrace Pump Room, and housed a utility station for the Solvent Storage Terrace.

#### Solvent Storage Terrace Pump Room

This gray door leads to the Solvent Storage Terrace Pump Room. It formerly supported the solvent process for the extraction cells and Product Purification Cells. In the 1970s, it was converted to the Acid Handling Area, designed to isolate recovered acid streams and produce various strengths of acid for use in the extraction cells. The Acid Handling Area was never used. During the WVDP, this room was used to house portable ventilation units to support Decontamination and Decommissioning work in Extraction Cell-2.

The green door opens to the roof.

We will now return to the South Stairs and go up to the 4<sup>th</sup> Floor.

- 15. → Go back to the South Stairs. Take the South Stairs up to the 4<sup>th</sup> Floor. Go through the swing arms the door into the UXA, turn left and move through the door leading to the VEC, HAC, and PCR area.**



The Ventilation Exhaust Cell is to the South. The Hot Acid Cell is to the West. Far to the North is the Process Chemical Room.

#### Ventilation Exhaust Cell

The Ventilation Exhaust Cell has supplied controlled ventilation air exhaust and filtration for the entire processing plant since 1966. The cell contains the two large main ventilation exhaust blowers and associated drivers, plenums, filters, ductwork, dampers and controls. The base of the plant stack is located in the room and is visible through the window in the door. There are 2 parallel filtration systems in-cell; one for operation and one in standby. Each blower is connected to a filter bank. Each bank is comprised of 30 HEPA filters and 30 roughing filters. An electric blower exhausts air from the Fuel Receiving and Storage Facility to the stack. There is no standby blower or filter for this Fuel Receiving and Storage exhaust system. The room also contains a hoist.

#### Hot Acid Cell

The Hot Acid Cell was originally intended to handle a partially decontaminated grade of nitric acid used for dissolving fuel. It did receive intermediate recovered acid and mixed batches of nitric acid for delivery to plant dissolvers. The cell contains 2 nitric acid storage tanks (capacity 3200 gal and 1800 gal) and a pump niche (pump capacity 50 gpm). The main area measures approximately 17 foot by 20 foot by 15 foot. The cell entryway and pump niche area measures approximately 6 foot by 13 foot by 8 foot high. The cell tanks were flushed by Nuclear Fuel Services after operations ceased.

#### Process Chemical Room

The Process Chemical Room was designed to feed solutions to Chemical Process Cell vessels. The floor of the Process Chemical Room is the roof of the Chemical Process Cell. The room contained 4 make-up tanks and feed pumps. The area now contains a power conditioner and a compressor.

Neither the Hot Acid Cell nor the Process Chemical Room is currently used. Take a quick look at these areas, and then we'll go back out through the door to the Upper Extraction Aisle.

**16. → Exit area through the same door. Move into UXA to a point adjacent to the Control Room.**

#### Upper Extraction Aisle

This is the Upper Extraction Aisle. The Extraction Cells are on the other side of the wall to the South. This area was an operating aisle for access to utility and instrument connections to extraction cell equipment. It now serves as general building access for maintenance and surveillance. This aisle contains ventilation ducts, utility headers, stack monitoring equipment, and instrument transmitters. A structural steel catwalk runs the length of the aisle, about 8 foot off the floor, for access to transmitters and piping. Most items in this aisle are currently shut down.

**17. → Move through door into the center of the Control Room.**

#### Control Room

This is the Control Room. It was used to house process control instrumentation for the

reprocessing operations. Only a few limited instrument gauges are now operational. This area includes a records aisle that wraps around behind these instrument racks (from this open area on the left around to the door on the right), a small office, and the Analytical and Process Chemistry still storage area. A portion of that hallway is contaminated.

We will now take the East stairs to the Extraction Chemical Room.

- 18. → Exit the Control Room. Enter East Stairs and go up to the XCR. Enter XCR and stop on east side of XCR Enclosure.**

#### Extraction Chemical Room / Extraction Chemical Room Enclosure

The 5<sup>th</sup> Floor of the Main Plant contains the Extraction Chemical Room. The white structure to the West is the Extraction Chemical Room Enclosure.

Historically this area contained many tanks used to mix and feed process solutions to the solvent extraction cells. The tanks and piping have mostly been removed. Concrete was poured inside the berm to cover the tank base legs and provide a level floor surface. The WVDP has used this enclosure for Decontamination and Decommissioning of Extraction Cell-2 and an enclosure for the Extraction Cell-1 Arm. It now provides general building access for maintenance and surveillance and access to the extraction cells and Product Purification Cells. A 5-ton monorail hoist is located in the southwest corner of the room and leads to the outside. The new prefabricated enclosure [the Extraction Chemical Room Enclosure] around the extraction cell hatch covers was installed for gross decontamination of Extraction Cell -2. The enclosure contains two 5-ton hoists.

#### Pulser Equipment Aisle

The Pulser Equipment Aisle is located along the South wall. It historically contained 11 air pulsers for delivering timed and measured air pulses to 11 extraction columns in the cells below, as well as piping, valves, instrumentation, and surge tanks for controlling extraction system flow streams- some of which were in shielded enclosures. A small niche contained pipe and valves associated with extraction feed pressure pots. Some equipment has been removed. This aisle is currently not used.

We will now move around the Enclosure, past the roof access door and the Extraction Cell-1 enclosure to the South stairs.

- 19. → Move along the north side of enclosure to the west end of the XCR. Stop adjacent to the XC-1 enclosure.**

This is the enclosure over Extraction Cell-1 that houses the remotely-controlled arm that was used to sample and characterize Extraction Cell-1 for future Decontamination and Decommissioning activities.

- 20. → Move down the South stairs to the OGA level on the 3<sup>rd</sup> floor of the Main Plant. Enter the OGA and stop adjacent to the PSC-3 door, without moving around the corner toward the ADA.**

We are now located on the 3<sup>rd</sup> floor level of the Main Plant Process Building in the Off-Gas Operating Aisle, or Off-Gas and Acid Recovery Aisle.

### Off-Gas Operating Aisle

This aisle was used to monitor and control operations in the Off-Gas Cell, Acid Recovery Cell, and part of the Chemical Process Cell. It also provided access to Process Sample Cell 3, the 3<sup>rd</sup> floor offices, and the Analytical Decontamination Aisle and Analytical and Process Chemistry area. It is now used primarily as a passageway between the laboratories, office bldg, and the south and southwest stairs.

It contains a removable concrete floor plug for access to the Off-Gas Cell and a plug for access to the Acid Recovery Cell. The plugs have roof hatches directly above. Most valves, piping, instrument transmitters, pumps, tanks, and mixers in this area have been removed. There is historical chemical damage to the floor areas.

### Acid Recovery Cell (ARC) Tower

Behind the approximately 8 foot by 8 foot corner is the Acid Recovery Cell Tower. It is the upper portion of the Acid Recover Cell and houses the Acid Fractionator.

The door to the West is an entryway from the third floor Plant offices.

- 21. Move around the corner past the ADA door toward the ANA door, but without going through the ANA door. (If the group cannot all fit around the corner, either back up closer to the ANA door, or ask them to fill walkway toward the plant office area.)**

### Process Sample Cell-3

The door to the South leads to the Process Sample Cell-3 Airlock. Process Sample Cell-3 was used to sample Off-Gas Cell and the Acid Recovery Cell vessels. It is now used to sample vessels in the Off-Gas Cell. With the airlock, it is approximately 6 foot by 10 foot by 10 foot. This cell contains a glove box and remote manipulator.

### Analytical Decontamination Aisle

This door to the North leads to the Analytical Decontamination Aisle.

This aisle was used to provide access to the hot analytical cells, the 2-C sampler, and the Sample Storage Cell. It still serves that purpose. It is a 5 foot by 25 foot aisle located west of and immediately adjacent to these cells.

### Extraction Sample Aisle

As we pass through this next door, you will see a door directly in front of you. That door leads to the Extraction Sample Aisle and its associated Airlock. That aisle contained 2 glove boxes for sampling the Product Purification Cells and Extraction Cell 2 and 3 vessels. It now serves as a storage area to support the laboratories. The aisle measures about 5 foot by 30 foot, and the airlock approximately 5 foot by 6 foot.

- 22. → Move through the ANA door to the Analytical Lab Area. Stop at the first hallway intersection.**

### Analytical Aisle / Sample Cell-2 / Hot Analytical Cells

This is the Analytical Aisle. The first window is to Sample Cell 2.

Sample Cell-2 was used to remotely sample Off-Gas Cell and Extraction Cell 1 and 2 vessels.

It is now used as a lab storage space. The cell measures 4 foot by 6 foot by 8 foot. The shield window is filled with mineral oil and has 1 Master Slave Manipulator installed over it. The cell has external valving for air samplers and a conveyor connection to the Hot Analytical Cells and Sample Storage Cell. It is maintained under negative pressure.

The other five windows are to Hot Analytical Cells 1-5. These cells were used by Nuclear Fuel Services for hot analytical work and plutonium sample storage. The WVDP used the cells to support Vitrification sample processing. They are now used for sample analysis to support Decontamination and Decommissioning activities. Each cell measures 6 foot by 6 foot by 9 foot. There is a steel door at the rear of each. These shield windows formerly held zinc bromide, but are now filled with mineral oil. There is a pair of stainless steel work pans mounted in each cell. Cells 1 & 5 have transfer drawers. There is a pair of Master Slave Manipulators in each cell. All cells are equipped with standard lab utilities. A conveyor connection exists between all 5 cells, the Sample Storage Cell, and Sample Cell 2. The cells are maintained under negative pressure.

The Analytical Decontamination Aisle is located behind these cells.

**22A. Allow tour participants the opportunity to utilize the restrooms down the hall.**

Analytical Laboratories

This intersecting hallway contains a few of the Analytical Laboratories and associated storerooms and change areas. The East stairs and washroom facilities are located at the end of the hall. As we continue down this main hallway, we will pass the remaining labs and the Sample Storage Cell to your left. These labs were used for hot chemical analysis work to support fuel reprocessing operations (Nuclear Fuel Services) and Vitrification processing (WVDP). They are now used for chemical analysis to support Decontamination and Decommissioning and Facility Characterization. They contain some clean areas. The labs contain approximately 100 lineal foot of lab bench space with the usual plumbing and various equipment. Hoods in these areas may contain loose radioactive particulate.

**23. → Continue down the hall. Stop in the sample storage cell work area.**

Sample Storage Cell

This is the Sample Storage Cell. It was previously used for hot analytical work, Plutonium sample storage, and Vitrification sample processing. It is now used for sample analysis to support D&D activities. It measures 6 foot by 24 foot by 6 foot 6 inch. It contains 3 lead glass windows, 2 of which were originally shuttered. It has a removable roof and wall plugs, a conveyor elevator to the C-1 Sampler; a 500 lb. hoist with a chute to the Process Mechanical Cell, and a conveyor connection to the Hot Analytical Cells and Sample Cell 2. It contains 6 Master Slave Manipulators and is maintained under negative pressure.

**24. Continue down the hall. Stop between the doors to the PMCRE Airlock and the North Analytical Aisle (NAA).**

Process Mechanical Cell Crane Room Enclosure Airlock

To the East, is the Process Mechanical Cell Crane Room Enclosure Airlock. This room formerly served as a counting lab. The WVDP converted the room to serve as an access point to the Process Mechanical Cell Crane Room Enclosure. The area includes a vestibule, suit-up/prep area, and airlock.

On the other side of these doors, to the West, we will pass the back side of the Process Mechanical Cell/Process Mechanical Cell Crane Room Door Hoist Enclosure to the North. The Hoist Enclosure houses the concrete shield door and door hoist equipment. It has a rear entry door to access the ball screws and gear reducers for the shield door.

**25. → Move through the double doors to a point between the CCR and PMCRE windows in the NAA.**

#### North Analytical Aisle / Chemical Crane Room

This is the North Analytical Aisle. To the West is the entry airlock tent for the Chemical Crane Room. The Chemical Crane Room is used as a parking, decontamination, and maintenance area for Chemical Process Cell bridge cranes and the power manipulator (PAR). The roof has removable concrete roof blocks. The floor also contains a removable floor hatch for manipulator repair. There is 1 lead glass window located adjacent to this access door with airlock and shielding labyrinth. There is a structural steel work platform on the north side for crane access. The 100 ton shield door in the south wall is raised and lowered with a built-in electric hoist. The room was originally equipped with lighting, spray piping for decontamination, and a floor drain to the Chemical Process Cell catch tank.

#### Process Mechanical Cell Crane Room Enclosure

To the East, this window provides a view into the Process Mechanical Cell Crane Room Enclosure. The enclosure provides access to the Process Mechanical Cell Crane Room and the Process Mechanical Cell Shield Door Enclosure. It was added to provide access to Process Mechanical Cell Room below. It contains a 5-ton gantry crane and rolling hatch cover access to the Process Mechanical Cell Crane Room. The enclosure also has a roof hatch.

On the way to our next stop, we will pass a window that looks in on the Process Mechanical Cell Crane Room and the door to the original crane room airlock. Since these areas are located in the North stairwell, I would like to give you the history and construction of these areas here before we proceed.

#### Process Mechanical Cell Crane Room

The Process Mechanical Cell Crane Room was constructed to provide a contact maintenance area for the 2 cranes and power manipulator (PAR) bridges in the Process Mechanical Cell. It still serves that purpose. The south wall is the 55-ton concrete door to the Process Mechanical Cell and is 3 foot thick. The airlock, high on the west side, measures approximately 5 foot by 9 foot by 11 foot. There is a lead glass viewing window on same side. There are 2 crane bridges on rails about 7 foot above floor and a power manipulator (PAR) bridge on rails about 4 foot above floor. A 4 foot square hatch in the floor leads to the Manipulator Repair Room. When the room was built, the north half of the roof was made of precast interlocking concrete sections which could be removed to replace an entire crane from outside the building. It was modified by the WVDP when the Process Mechanical Cell Crane Room Enclosure was built over the roof. Now the former roof is the floor of the Enclosure. The former concrete hatch sections were replaced with a rolling steel hatch. The concrete shield door is moved vertically by ball screw jacks. There was a provision for remotely washing down cranes in the original design. Formerly, access was via the airlock from the north stairs at the 119 foot 7 inch level. Current access is from the Process Mechanical Cell Crane Room Enclosure. The original airlock is no longer used for Process Mechanical Cell Crane Room access.

We will now proceed down the North stairs, past the Process Mechanical Cell Crane Room window and the Process Mechanical Cell Crane Room Airlock door, and then outside to the Manipulator Repair Shop.

- 26. → Move down the North Stairs, stopping briefly by PMCR window to allow the visitors to look inside the cell. Continue down the stairs and into pigeon alley. Enter the Manipulator Repair Shop. Move to a point near the Contact Size Reduction Facility window.**

#### Manipulator Repair Shop

This is the Master Slave Manipulator Repair Shop. It was constructed around 1971 to allow repair of contaminated Master Slave Manipulators near to their point of use, particularly those in the Process Mechanical Cell, General Purpose Cell, Scrap Removal Room, and laboratories. It is approximately 36 foot by 90 foot by 19 foot. The facility has controlled ventilation, utilities, lighting, an overhead monorail, and decontamination facilities. The floors and tanks were designed to drain to a buried 1500 gallon tank (15D-6) east of the Master Slave Manipulator Shop. Under the Project, the ventilation has been upgraded, a new floor poured, and a stainless steel pan added. Temporary shielding was installed in the southeast corner for additional protection from the HEV filter plenum. The facility contains one lead glass window in the north wall that looks in on the Contact Size Reduction Facility.

#### Contact Size Reduction Facility / Decontamination Room

Through this window in the north wall, you can see the Contact Size Reduction Facility. This room was used for the size reduction and packaging of contact handled Low Level Waste and the decontamination of Master Slave Manipulators. It is now a Resource Conservation and Recovery Act (RCRA) container storage unit. There is an airlock with rollup doors to the cutting room, along with a man door from the Master Slave Manipulator Repair Shop. The part of the facility once called the Decontamination Room is located behind that wall, and can be entered through an airlock on the other side of the building, as well as a door in this section of the Contact Size Reduction Facility. This area is used for Master Slave Manipulator decontamination. It is a 24 foot by 35 foot room with a stainless steel floor pan containing the Master Slave Manipulator decontamination stall, a cutting room, and a staging area. The Master Slave Manipulator decontamination stall contains an ultrasonic bath. The staging area contains a Liquid Abrasive Decontamination System booth - apparently never used. The staging area may be accessed from the airlock on the east side of the building as well. These areas were also connected to the 1,500 gallon underground tank, 15D-6.

We will now go back outside for a quick stop to see the Scrap Removal Room Enclosure and Airlock.

- 27. → Return outside and stop in front of the SRRE.**

#### Scrap Removal Room Enclosure and Airlock

This is the Scrap Removal Room Enclosure and Airlock. It was used as an access point to move waste drums and boxes in and out of the Scrap Removal Room by use of a powered roller conveyor. It is not currently used.

We will now head back inside the Main Plant to the North stairs.



- 28. → Enter the MPPB by way of the North Stairs. Travel all the way down and into the GOA. Move east to the center of the GOA. Stop in front of the GPC windows, facing the group, with your back to the windows.**

#### General Purpose Cell Operating Aisle

This is the General Purpose Cell Operating Aisle. It has historically provided access to the Miniature Cell and the General Purpose Cell Crane Room and as an operating area for mechanical manipulation in the General Purpose Cell. It now serves for general building access for maintenance and surveillance and access to the Miniature Cell and the General Purpose Cell Crane Room. It contains four lead glass shield windows - three to the General Purpose Cell and one to the Miniature Cell. The access doors on the west end lead to the General Purpose Cell Crane Room airlock and the Chemical Process Cell Vault Waste Catch Tank. The access door on the east end leads to the Miniature Cell. Equipment hatches and a man hatch located in the northeast corner of the aisle connect to the South MSM Shop. The equipment hatch is serviced by a 2-ton crane.

#### General Purpose Cell Crane Room and its Airlock

The General Purpose Cell Crane Room and its Airlock are to the West. The crane room has historically been used as a storage and contact maintenance area for the General Purpose Cell Bridge Mounted Manipulator System (PAR). It currently serves no use. The East wall has a door opening on the upper half covered by the General Purpose Cell shield door. There is a work platform 13 foot above the floor. The room was also equipped with spray headers to wash contamination from the crane, power manipulator (PAR), bridges, and motors and gear boxes for the General Crane Room – General Purpose Cell door jacks.

The airlock, formerly used to access to the Crane Room, is not currently used. It is located on the north side of the crane room and is also reinforced concrete. It measures approximately 13 foot by 5 foot by 22 foot .

#### GCR Extension (GCRX)

The GCR Extension (GCRX) is located off the west end of the General Purpose Cell Crane Room. It was historically used as a General Purpose Cell crane bridge storage location. This extension allowed one or both bridges to be parked west of the main part of the General Purpose Cell Crane Room to allow entry into the room with reduced exposure.

#### Chemical Process Cell Vault Waste Catch Tank

The Chemical Process Cell Vault Waste Catch Tank, occasionally called General Crane Room Catch Tank, may be accessed through the door on that platform. It was used to collect contaminated drainage from all the crane rooms, the Chemical Process Cell door slot, and the Equipment Decontamination Room. It houses Tank 12-35104, and currently serves the same function for which it was originally designed. This area is comprised of a concrete vault containing a 5,900 gal tank which contains Resource Conservation and Recovery Act constituents.

#### General Purpose Cell

These shield windows look in on the General Purpose Cell. The General Purpose Cell was used to load chopped fuel into stainless steel baskets as it dropped from Process Mechanical Cell shear through an 8-inch diameter chute. The basket could be temporarily stored in storage areas located along the back wall of the cell. The baskets of chopped fuel were then transferred to the Chemical Process Cell through the roof hatch located to the right of the cell. After the

chemical separation, the leached fuel hulls were returned to the General Purpose Cell. While the leached fuel hulls were in the General Purpose Cell, some of the hulls were removed and taken through the Process Mechanical Cell to the Sample Storage Cell, where they could then be analyzed to determine the effectiveness of the chemical dissolution. The remaining leached hulls were packaged for burial in the on-site disposal area. The leached fuel hulls were then moved through the General Purpose Cell roof hatch to the Scrap Removal Room.. The cell contains an Overhead Bridge Mounted Manipulator System and auxiliary 2-ton chain hoist. One of the three leaded glass shield windows is operable (viewable). Each window has carbon steel shutters available. The cell contains three ceiling hatches - one to the Process Mechanical Cell, one to the Chemical Process Cell, and one to the Scrap Removal Room. The ceiling also contains the 8-inch diameter stainless steel chute that was used to transfer chopped fuel from the Process Mechanical Cell shear to General Purpose Cell. There is a periscope and maintenance port located on the north wall. The General Purpose Cell Crane Room shield door is a 25-ton vertical door operated by screw jacks.

**29. Move to the east end of the GOA, near the MC window, and stop.**

Miniature Cell / Miniature Cell Airlock

The Miniature Cell and its Airlock are here. The Miniature Cell was designed for possible use as an experimental, research, or special project area. It never contained process equipment and was never used during fuel reprocessing. It is not currently used. There is a lead glass viewing window in the north wall from the General Purpose Cell Operating Aisle. A shield door and labyrinth type air lock provide access through the northeast corner of the cell. There are manipulator ports over the shielded window, but no Master Slave Manipulators installed. There is one camera in one of the Master Slave Manipulator ports. A shielded transfer device exists for passing articles up to 5 inch diameter from the operating aisle to the cell. There is a 1-ton monorail hoist in the Miniature Cell, operable from this aisle. The cell also contains utility connections from the aisle and a 16 inch diameter vertical chute to the Process Mechanical Cell.

The Miniature Cell Airlock, is currently reported to contain miscellaneous debris and equipment.

Our next stop is the West Mechanical Operating Aisle.

**30. → Go back to the North Stairs and travel up to the WMOA on the First Floor of the Main Plant. Stop just beyond the SRR window.**

West Mechanical Operating Aisle

This is the West Mechanical Operating Aisle. It served as the operating station for both the Process Mechanical Cell and the Scrap Removal Room, allowing visual contact and control of all operations in these cells as well as all powered cranes, manipulators and other in-cell devices. It also provided access to the Manipulator Repair Room. It is now used for general building access for maintenance and surveillance. There are 4 lead glass shielded windows looking into the Process Mechanical Cell with 2 manipulator ports over each. There are presently 3 manipulators installed. It also contains 2 pits for steam condensate traps that were on the dissolver vessels in the Chemical Process Cell, and a viewing window, Master Slave Manipulator, crane control station for Scrap Removal Room, and an air handler.

The High Level Waste Interim Storage Facility is located behind the west wall.

The Liquid Waste Cell is behind the south wall.



### Scrap Removal Room

This window on the right looks in on the Scrap Removal Room. Historically, it was used for the removal of very high-level waste, mostly fuel scrap, from the General Purpose Cell for placement in a transport cask for removal to the Nuclear Regulatory Commission Licensed-Disposal Area. The scrap (fuel hulls, etc.) was usually put in 30 gallon metal drums. Scrap could also come from analytical laboratory hot cells, the Process Mechanical Cell, and the Chemical Process Cell. It was also used to place clean mechanical parts in these cells. The Project used the cell to move waste and waste containers in and out of the Head End Cells. It is not currently in use. The north end is an inoperable sliding shielded door, leading to the Scrap Removal Room Enclosure. An overhead door is currently used. The south wall facing the Chemical Process Cell is 20 inch thick steel. The lead, oil-filled viewing (shield) window in the southeast corner has 1 Master Slave Manipulator installed. A hatch connects to the cell to the General Purpose Cell. The hatch cover is operated by hydraulic control from this aisle. A 7.5 ton bridge crane runs the length of the room from north to south, and is also operated from this aisle. The cell was equipped with internal sprays for remotely washing down the floor and cask.

### Process Mechanical Cell

Through these other windows you can see the Process Mechanical Cell. It was originally used to prepare fuel for chemical dissolution. It was shut down in 1972. It contained a 300-ton hydraulic shear, high-speed abrasive cut-off saw, tilt fixture, table, clamps, and rams for disassembly of fuel and shearing of that fuel into short pieces for dissolution. It is not currently used. The interior dimensions of this cell are 12 foot by 52 foot by 25 foot. The upper half of the north wall is a 3 foot thick elevating concrete door leading to the Process Mechanical Cell Crane Room. There a total of 6 lead glass shield windows from the east and west operating aisles. 4 are usable. There are 2 Master Slave Manipulator ports above each window; with 3 Master Slave Manipulators currently installed. There are 2 crane bridges of 2-ton capacity, each traveling on rails 21 foot above the cell floor. The set of rails about 18 foot above the floor carries a 1-ton power manipulator (PAR). The cranes and power manipulator (PAR) may be operated from electrical consoles at any window. The cell connects to the Fuel Receiving and Storage Facility at the southeast corner through a hydraulically operated hatch. The northeast corner is connected to the General Purpose Cell by a 3 foot by 4 foot hatch and to the Miniature Cell by a 16 inch diameter stainless steel chute. Additionally, there is an 8 inch diameter stainless steel chute from the location of the Process Mechanical Cell shear down to the General Purpose Cell. The east wall connects to a shielded transfer port and air lock. Most of the debris and major equipment were removed in November, 2004. Gross decontamination was completed on the surfaces, and a fixative was applied.

### Manipulator Repair Room Airlock

The Manipulator Repair Room Airlock is behind the door to the north. This room was used for extending and accessing the arm of the Process Mechanical Cell power manipulator (PAR) from the Process Mechanical Cell Crane Room. It is currently not used. There is a 4 foot by 4 foot hatchway in the ceiling for insertion of the power manipulator (PAR) arm from the crane room above. The hatch can be covered with a stepped concrete plug from the crane room. There is a small lead glass shield window for observation from this operating aisle. A means for washing down internals existed in-cell. Additional shielding on the walls and a stainless steel floor cover were added in the 1980's.

Next, we will make another brief stop outside.

**31. → Move through WMOA towards the EMOA, but stop in the South MSM Shop.**

#### South Master Slave Manipulator Repair Shop

This area is referred to as the South Master Slave Manipulator Repair Shop. It provides access to the Master Slave Manipulator Repair Shop (through the double doors) and contains crane and man hatches to access the General Purpose Cell Operating Aisle. It measures approximately 21 foot by 20 foot .

#### South Master Slave Manipulator Storage Area

The single door in the northeast corner is to the South Master Slave Manipulator Storage Area. This room may have been used as a parts storage area for the Master Slave Manipulator Repair Shop. It currently serves no purpose. The only access is from this door.

**32. → Exit through the east door. Move down the boardwalk to the stairs near the front of the HEV Building.**

#### Head End Ventilation Building

This is the Head End Ventilation Building. It was installed to give the head end cells additional air flow to produce greater negative pressures - reducing problems with high airborne particulate in the crane rooms and backup of airborne radioactivity into occupied areas. The Head End Cells include: Equipment Decontamination Room, Scrap Removal Room, Chemical Process Cell, Chemical Process Cell Crane Room, Process Mechanical Cell, Process Mechanical Cell Crane Room, General Purpose Cell, Miniature Cell, General Purpose Cell Crane Room, Master Slave Manipulator Shop, Contact Size Reduction Facility/Decontamination Shop, and General Operating Aisle. The building measures 23 foot by 17 foot by 22 foot . The lower level houses filters, blowers, ductwork, and other associated equipment, while the upper level contains a crane and filter change-out equipment. The filter housing area contains glove port aisles, but the gloves have been removed from the ports. The facility has an airlock, as well. Air is supplied by a steam heated air handler and exhausted by electric driven blowers to the Main Plant Process Building stack. All exhaust air is filtered through prefilters, roughing filters, and 2 stages of HEPA filters. There are dual filter trains with a standby electric blower. There is an associated instrument area outside on the south side with permanent shielding.

**33. Move back up the boardwalk. Stop adjacent to the HEV Monitoring Room.**

#### HEV Monitoring Room

That area houses the instrumentation for monitoring the Head End Ventilation System. Let's go back inside to the East Mechanical Operating Aisle.

**34. → Enter the MPPB through the same door you used to exit. Move back into the EMOA. Stop just before the PMC-TA.**

#### East Mechanical Operating Aisle

This is the East Mechanical Operating Aisle. It was used to monitor the Head End Ventilation system provided access to the Process Mechanical Cell. It also provided access to the South Master Slave Manipulator Shop, the Fuel Receiving and Storage Facility, the Chemical Access Aisle and the Ram Equipment Room. It now provides access for maintenance and monitoring of these areas. It contains an instrument panel for the Head End Ventilation system, an out-of-

service dry chemical fire extinguisher unit, a motor control center, and relay cabinets for the cranes. This aisle also houses the Process Mechanical Cell Shuttle Transfer Port. This aisle also housed hydraulic, electrical and some mechanical portions of the fuel shear and ram and operations controls for all other mechanical, electrical, or pneumatic devices in the Process Mechanical Cell. The area was air conditioned by a 15-ton unit, with a 2<sup>nd</sup> air handler in the West Mechanical Operating Aisle.

#### Process Mechanical Cell Shuttle Transfer Port

This structure is the Process Mechanical Cell Shuttle Transfer Port. It was a shielded airlock for passing parts and material into the Process Mechanical Cell from this aisle. It is currently inactive. It measures about 9 foot by 8 foot by 9 foot. The structure was built around never-installed shield window 2M-1E. The original window plug was replaced with a shielded transfer port containing a shuttle cart. The cart allowed for handling of pieces up to 20 inch by 20 inch by 28 inch long, and 300 pounds. The airlock on the north side extends 3 foot 6 inch. The floor slopes to the northwest to a 12 inch by 12 inch by 6 inch sump. The structure contains the transfer port assembly, an electric motor/gear reducer/ chain drive shuttle cart, the shuttle cart travel beam, pneumatic cylinders to actuate shielding doors, and miscellaneous process piping, valves, and electrical connections for operation.

**35. → Proceed south in the EMOA to the FRS Guard Room. Enter the Guard Room. Stop in the door to the Cell Access Aisle.**

#### Fuel Receiving and Storage Guard Room

This is the Fuel Receiving and Storage Guard Room or Central Alarm Station #1. Historically, this room housed central alarm system panels for the Main Plant Process Building. Under the WVDP, it was used as a change area and supervisor's observation area for entries into cells from the Chemical Access Aisle. It measures approximately 9 foot by 12 foot .

**36. → Move into the CAA.**

#### Cell Access Aisle

This is the Cell Access Aisle. The Ram Equipment Room, the Liquid Waste Cell, the Uranium Product Cell, Extraction Cells 2 and 3, and the Product Purification Cells are all accessible from this area. It has served as an airlock and buffer area during contact maintenance in those cells and a location for cell monitoring equipment. It connects to the East Mechanical Operating Aisle, the Ram Equipment Room, and the Fuel Receiving and Storage Facility. It now provides general building access for maintenance and surveillance. Historically, there was fixed contamination on floors and in a drain pipe passing through.

#### Uranium Product Cell

Access to Uranium Product Cell and Product Purification Cell is via the Uranium Product Cell. Nuclear Fuel Services used the Uranium Product Cell to hold off-specification uranium product and uranium product awaiting shipment. At the WVDP, the tanks were used as part of the Liquid Waste Treatment System. The cell contains 2 horizontal storage tanks. One tank has 2 compartments with one reserved for off-spec product. The other space was for uranium product awaiting shipment. The room was decontaminated and retrofitted to support the Liquid Waste Treatment System. A shield wall was installed in the 1980s to wall off the south part of the cell to allow access to the Product Purification Cell-North without full entry to the Uranium Product Cell.

### Product Purification Cell

The Product Purification Cell was used for final purification and concentration of uranium and plutonium product streams. It currently houses a portion of Liquid Waste Treatment System. All equipment and piping in the cell was 304L stainless steel except the plutonium evaporator, which was titanium. All vessel supports, walkways, and ladders were carbon steel with acid resistant paint that was also used on the walls and ceiling. An internal wall runs east to west 5 foot from the south wall from floor to ceiling. Access point openings are cut in the wall at several levels. Most of the equipment has been removed.

### Extraction Cell –3 (XC-3)

Extraction Cell –3 historically housed equipment for the final extraction of uranium product, a solvent clean-up system, a pair of intermediate plutonium solution tanks, and a diluent wash system. It now houses a portion of Liquid Waste Treatment System, including the evaporator. There is a shielded access door at grade via the this aisle. Historical floor contamination was in the 1 million to 5 million cpm range.

### Extraction Cell –2 (XC-2)

Extraction Cell –2 was used for secondary clean-up of the uranium and plutonium streams. It is constructed of reinforced concrete, with a 304L stainless steel floor pan. There is an access door at ground level.

### Liquid Waste Cell

The Liquid Waste Cell interfaced with the Chemical Process Cell, the extraction cells, and the analytical hot cells. Liquids were sampled remotely, heated, mixed, and transferred to the Chemical Process Cell by remote steam operated jets. The cell now interfaces with the analytical hot cells, the Liquid Waste Treatment System, and the Uranium Product Cell. It is designed in an “L”-shaped configuration. It contains 9 tanks ranging from 500 to 8500 gallons. The north-south leg measures approximately 46 foot by 17 foot, while the east-west leg measures 19 foot by approximately 16 foot. A 17 foot by 10 foot 6 inch room exists at the junction of the two legs with 18 inch thick concrete shield walls around 2 tanks.

### Ram Equipment Room

The Ram Equipment Room historically housed the hydraulic ram (a stainless steel rod) used to push fuel assemblies through the shear inside the Process Mechanical Cell. Under the WVDP, it has been used as part of the removal pathway for waste boxes from the clean-out of Extraction Cell-2. It currently is not used.

**37. → From the CAA, move to the door to the FRS Airlock. Stop just BEFORE the airlock door, while still in the aisle.**

### Fuel Receiving and Storage Building Airlock

We are about to enter the Fuel Receiving and Storage Building Airlock. It provides access to the Fuel Receiving and Storage building from Chemical Access Aisle. It measures approximately 5 foot by 6 foot

**38. Move through airlock, a few people at a time.**

**39. → Stop in the South Aisle, beyond the steps, but with a clear view of the pool.**

### Fuel Receiving and Storage Facility

This is the Fuel Receiving and Storage Facility. It formerly housed the Fuel Storage Pool and fuel and cask handling equipment. It has most recently been used as an area for waste sorting and preparation for shipping. There is an overhead 100-ton bridge crane with 2 auxiliary 5-ton hooks. This facility includes an office, suit-up area and airlock on the south side of building; a resin pit and decontamination pump house outside on the east side, and ventilation housed on the north side.

We are currently standing in the South Operating Aisle. Along the walkway to the left as you entered was the fuel transfer tunnel. It was used to transfer fuel assemblies from the pool to the Process Mechanical Cell. It currently serves no purpose.

### Fuel Storage Pool

This is the Fuel Storage Pool. It was formerly used to store spent nuclear fuel prior to reprocessing or reshipment. It has no current use. There is a pair of 2-ton service bridges which travel over the pool. The pool was drained, scoured, and painted to fix remaining contamination, and the floor grouted.

### **40. Move to the end of the aisle, adjacent to the CUP.**

### Cask Unloading Pool

This is the Cask Unloading Pool. It was previously used to load or unload fuel shipping casks. It now has no use. It was drained, scoured, and painted to fix remaining contamination and the floor grouted.

We will now exit the facility. Please remember the rules for use of the Personnel Contamination Monitors. If you are hand carrying anything it must be hand-frisked, please let me know.

### **41. → Exit the FRS via the trailer and PCM (be careful of numbers in the trailer and protocols at the PCM) at the FRS Change Room. Assemble the group just outside the FRS Door.**

We will now re-enter the Main Plant via the East stairs.

### **42. → Re-enter the Main Plant through the East stairs airlock. Move to west end of airlock, near the East Stairs door.**

### Uranium Load Out Area

This room to your right is the Uranium Load Out Area. Under Nuclear Fuel Services, it was used for measuring shipments of uranyl nitrate hexahydrate solution in a 4000 gallon stainless steel weigh tank. The WVDP retrofitted the cell in the mid-1980s to support the Liquid Waste Treatment System. There is a small concrete niche in the room. The original pumps were removed, and 3 new pumps installed in the niche to service the Uranium Product Cell tanks. Valving, a sample station, and radiation monitors are installed on a mezzanine above the niche to support Liquid Waste Treatment System operations. The equipment was stainless steel for process purposes and carbon steel for utility lines.

We are standing in the East Stair Airlock, which served as an airlock for the Product Packaging and Shipping area. It now provides general building access for maintenance and surveillance and access to the Waste Reduction and Packaging Area, or Waste Reduction and Packaging Area. It measures approximately 6 foot 6 inch by 19 foot and is north of the Waste Reduction and Packaging Area. The floor of the airlock is 5 foot below the shipping area floor. As you can see, the areas are connected by a steel stairway and landing.

Up these stairs is the Waste Reduction and Packaging Area, where we will stop next.

**43. → Move up stairs and into main open floor area of WRPA.**

Waste Reduction and Packaging Area (WRPA)

This is the Waste Reduction and Packaging Area, formerly the Product Packaging and Shipping or Plutonium Bird Cage Storage Area. This area was used as a storage area and for shipping support. It is currently used as a Low Level Waste compaction area. This is one of the compactors that we have on site. The Product Packaging and Handling area is located adjacent to this area on the other side of the west wall. As you know, we just came through the north airlock serving this area. On the south end, there is an airlock connecting the Product Packaging and Shipping area, the Product Packaging and Handling area, the Lower Warm Aisle, and an outdoor shipping dock that is accessed via double doors. A sliding door provides access into the Product Packaging and Handling area. This section contains a 50-ton hydraulic compactor and 1,000 lb capacity jib hoist. It is also equipped with a battery charging device and 1/2-ton battery powered fork lift with a drum lifting attachment. This area also houses the Liquid Waste Treatment System Mercury Abatement ion exchange columns.

**44. → Enter the Lower Warm Aisle Airlock.**

We are currently standing in the airlock adjoining the Lower Warm Aisle, the Product Packaging and Handling Area, and the Product Packaging and Shipping Area. To your right is the Product Packaging and Handling Area. Around that corner to the left is the original shipping dock.

**45. → Enter the Lower Warm Aisle**

Lower Warm Aisle

This is the Lower Warm Aisle. The lower warm aisle historically provided a place where radioactive pumps, lines, valves, and instruments for operating the extraction system could be housed. It is now used for general building access for maintenance and surveillance and access to the extraction cells, as well as to support the Liquid Waste Treatment System. The aisle contains 10 pump niches. There is a manually operated 5-ton overhead bridge crane for lifting the niche covers that runs the full length of the aisle. Instrumentation and electrical services in the aisle were damaged by historical chemical corrosion.

Pump Niches

The niches in the Lower Warm Aisle, again 10 total, housed radioactively contaminated pumps, lines, and valves. Some are currently used in support of the Liquid Waste Treatment System. They contained 16 pumps of canned rotor or Lapp remote head type.

#### Lower Warm Aisle Airlock

The Lower Warm Aisle Airlock, through which we entered, provides access to the aisle from the east.

We will now return outside through the East Stair Airlock, passing through the Personnel Contamination Monitor. Again, if you have hand carried anything it needs to be frisked, please notify me.

**46. → Exit through the East Stairs airlock after passing through the PCM. Proceed into the FRS Yard. Stop in the FRS yard just west of the rail spur.**

#### Main Plant Switch Gear Room

Beyond and to the right of that transformer is the Main Plant Switch Gear Room. It is the power supply distribution center for the Main Plant Process Building. The room contains the main 480V, 3-phase bus and main circuit breakers for the plant. The transformers are outside of the east wall. These transformers step down the power from 34,500V to 480V. The combined rating is 2500 kVA. The 480V bus supplies 10 main circuit breakers that supply 14 Motor Control Centers. The E-bus portion of the 480V bus is supplied with power automatically from a 625 kVA standby diesel generator in the Utility Room.

This completes the tour of the Main Plant Process Building. We will now be touring the remainder of the Project facilities.

**47. → Travel east to intersection of roadways. Point out TSB, MNT Bldg, Storage trailers, Interceptors.**

#### Old Interceptor

Looking south, the facility closest to the road is the Old Interceptor. It was used to collect process waste waters from the Main Plant Process Building before treatment by the Low-Level Waste Treatment System. It is now used for storing radiologically contaminated liquids that exceed the effluent standard prior to eventual transfer to the new interceptors. Out-of-specification hot process water from the Main Plant Process Building is mixed with waters in the New Interceptor by an overland sump line to then route through the Low Level Waste Treatment Building, or LLW-2. It is a 37,000 gallon concrete catch basin. However, it has a high-level alarm set-point at a point four feet from the top, above which a crack is known to exist.

#### Neutralization Pit

Connected to the Old Interceptor is the Neutralization Pit. It was used to collect process waste waters from the Main Plant Process Building for pH neutralization before transfer through the Low Level Waste Treatment System. It is used to mix plant waste waters and route them to the New Interceptor. It is an 800 gallon in-ground, stainless steel lined, open top tank.

#### New Interceptor

The structure located just beyond the Old Interceptor is the New Interceptor, both the North and South portions. It receives influent from plant floor drains and process streams before their entry into the Low-Level Waste Treatment system. It consists of two 25,000 gallon stainless steel-lined, in ground, open top tanks.

#### Test and Storage Building



In front of you is the Test and Storage Building. It was originally used as a fabrication shop, support facility, parts storage area, break rooms, tool crib, and office areas. It still serves these purposes. It measures approximately 80 foot wide by 120 foot long.

#### Maintenance Building (Maintenance Shop)

The next building beyond the Test and Storage Building is the Maintenance Building. It was constructed in 1970 and has been used for cold maintenance and fabrication work for the plant. It is a high bay building with a 40 foot by 98 foot work area and 20 foot by 98 foot two-level area. The main bay has a 5-ton traveling bridge crane, machine tools, and metal-working equipment. The two-tiered section contains tool cribs, offices, an electrical shop, parts storage, a small pipe shop, a heating and ventilation unit, locker room, sanitary facilities, and Instrument and Calibration shop. The facility is heated with radiant gas heaters and forced air. It is supplied with potable water, compressed air, and 3-phase 460V power. Lower voltage is supplied from a lighting transformer.

#### Industrial Waste Storage Area

The area to your right, across the road, is referred to as the Industrial Waste Storage Area. Formerly, it was used for the staging of excess equipment from Process Building upgrades (under NFS). It is now used for the temporary storage of containerized industrial waste prior to off-site transport. It consists of two metal lockers for lawn care equipment storage and one lubrication locker. It is located south of the Test and Storage Building and Maintenance Shop.

**48. → Walk past TSB, MNT, trailers around corner to a point equidistant from 02, LLW2 and VTF. →Point out these facilities (read descriptions), then enter the LLW2.**

#### Low Level Waste Treatment Facility

The building in front of us is the former Low Level Waste Treatment Facility, also known as O-2. Historically, it received plant liquid wastes below  $5E-3$   $\mu\text{Ci/mL}$  gross beta and decontaminated them. It has been deactivated, and some utilities isolated. It measures 27 foot by 39 foot, and is a 2-story concrete block building. It was connected to both the lagoons and interceptors. It treated the waste by flocculation and centrifugation. Much of the equipment was stainless steel. It had a controlled ventilation system with air passing through HEPA filters. The facility was also supplied with steam, air, softened water, and chemicals from the Main Plant Process Building systems. It was put in service in 1971, and gross decontamination was completed in 1999.

#### Vitrification Test Facility

This building is the Vitrification Test Facility. It was formerly used as a test support facility and parts storage area, for mock-ups, and as office area. It currently, serves these same purposes, as well as a training hub. It is a 44 foot by 122 foot high bay building. It contains a bridge crane, the out-of-service Scaled Vitrification System, and one leaded glass shield window. This facility also includes the out-of-service Ammonia Storage Room located off the northeast corner of the building.

#### Low Level Waste Treatment Building

The building we will enter next is the current Low Level Waste Treatment Building, also known as LLW-2. We will step inside the doors to allow you to see the inside, and then move around to the back of the building to view the lagoon system.

This facility replaced the Low Level Waste Treatment facility, or O-2 Building, for the purposes of processing site low-level liquid waste. The facility contains 2 skid-mounted ion exchange



water treatment systems. Skid “A” is used for treatment of plant process water from Lagoon 2. Skid “B” treats water from the North Plateau Groundwater Recovery System.

**49. → Proceed to the south side of the LLW2 facility. Point out Lagoon system.**

The two larger lagoons to your right are Lagoons 2 and 3, respectively. The two smaller, lined lagoons in front of you are Lagoons 4 and 5, respectively. The area to the west of Lagoon 2 is where the former Lagoon 1 was located.

Lagoon 2

Lagoon 2 has been used to hold plant radiological liquid waste water for processing. It is an unlined pit with a storage capacity of 2.4 million gallons. It is used as a storage basin for radiological wastewater discharged from the New Interceptors before its contents are transferred to the Low-Level Waste Treatment System.

Lagoons 4 and 5

Lagoons 4 and 5 are used to hold treated water for analysis and pH adjustment. They are rubber-lined pits that receive treated water from the Low-Level Waste Treatment System and discharge it to Lagoon 3. Lagoon 4 has a capacity of 204,000 gallons. Lagoon 5 has a capacity of 166,000 gallons.

Lagoon 3

Lagoon 3 is the final holding lagoon for decontaminated liquid waste prior to discharge to Erdman Brook. It is an unlined pit with a storage capacity of 3.3 million gallons. Presently, it receives treated water from Lagoons 4 and 5. Treated wastewater in Lagoon 3 is periodically discharged to Erdman Brook through a state permitted discharge. A french drain is located on the northeast side of Lagoon 3. This drain was installed to prevent groundwater from flowing into the Lagoon. The French drain was plugged in 2001.

**50. Walk over to the Shipping Depot.**

**→ Point out Maintenance Storage Area, Vehicle Maintenance Shop on the way and point out the NPGRS, CDDL, and Cold Hardstand.**

Maintenance Storage Area

To your left is the structure referred to as the Maintenance Storage Area. It is a sheet metal storage area measuring approximately 33 foot by 40 foot.

Vehicle Repair Shop

There is the Vehicle Repair Shop. It is a 30 foot deep by 47 foot wide structure that is currently used for repairing site equipment.

North Plateau Groundwater Recovery System

That cargo container houses the North Plateau Groundwater Recovery System; otherwise known as the pump and treat system. The system was installed in the mid-1990's to pump Sr-90 contaminated groundwater and treat it with ion exchange technology. The water now routes through the Low Level Waste Treatment facility Skid “B” for treatment. The insulated 8 foot by 40 foot by 10 foot cargo container houses 3 recovery wells. There is an associated storage shed located on the back side of the facility.

Construction and Demolition Debris Landfill (CDDL)

The clear, slightly mounded area beyond the North Plateau Groundwater Recovery System, on the other side of the road, is the Construction and Demolition Debris Landfill. It was used for the disposal of non-radioactive construction, office, and facility debris and ash from the paper incinerator from 1963 until 1984. It is no longer used. The Construction and Demolition Debris Landfill is located approximately 1,000 feet northeast of the Main Plant Process Building, and covers an area of 1.5 acres. The Construction and Demolition Debris Landfill is excavated into the sand and gravel layer on the north plateau (as indicated by the five boreholes nearest the Construction and Demolition Debris Landfill) and has a depth of 10 to 15 feet below preoperational grade. It does not have a liner or a leachate detection/collection system.

#### Cold Hardstand

The area across the road to the left of the North Plateau Groundwater Recovery System is called the Cold Hardstand. Historically, it was used for the staging of containerized paint, used oil, and spill cleanup material. It was later used as a nonradiological, nonhazardous waste staging area. It is now used for the temporary staging of heavy equipment, empty drum crushing, and equipment storage. It is a gravel pad, located west of the Construction and Demolition Debris Landfill.

#### Vitrification Test Facility Waste Storage Area

You may also notice a large empty tank along-side the road just behind the North Plateau Groundwater Recovery System trailer. This tank, along with those located up there in the bermed area on the north side of the Vitrification Test Facility, make up the area referred to as the Vitrification Test Facility Waste Storage Area. Originally, this area contained several above-ground stainless steel storage tanks used in support of the Scaled Vitrification System. It is now used to store closed tanks.

#### Lag Storage Complex

This is the lag storage complex. This is the Shipping Depot. Behind the Shipping Depot is Lag Storage Area (or LSA)-4, and behind that, LSA-3.

We will now head into the Lag Storage Office Area where we must sign in with the facility manager and obtain additional dosimetry. Each of you must also wear a safety vest while in this area for increased visibility for the fork truck operators that may be working here.

- 51. → Log into visitor's log in office area on behalf of tour. Enter Shipping Depot. Obtain tour lag EDs and surrender tour general EDs. Notify issuing person of the exchange arrangement for the EDs- ED's are to be exchanged at the SSPF in approximately 10-15 minutes. Point out Shipping Depot Containment.**

#### Shipping Depot

This is the Shipping Depot. It was formerly used for the shipping of radiological wastes and mixed wastes. It is now used for the repackaging and shipping of radiological wastes and mixed wastes. The shipping depot is connected to LSA 4 and is a 91x85 ft metal frame structure. It houses the Depot Containment structure, and includes the concrete block office area on the east side. The containment has been used for asbestos abatement activities in the past. It currently supports waste sorting and repackaging activities.

- 52. → Enter LSA-4 through mandoor to the east , as opposed to the roped boundary entry by the PCM, to avoid frisking. At LSA-4 point out CSPF and WPA.**

#### Lag Storage Area - 4 (LSA-4)

This is Lag Storage Area 4 also known as LSA-4. It is used for the storage and preparation for shipping of radiological waste and mixed waste. It measures 291 foot long by 88 foot wide. The LSA-4 is similar to LSA-3, but is different in that it includes, a container sorting and packing facility, a waste packaging area, and a covered passageway between LSA-3 and LSA-4. It also connects to the Shipping Depot.

#### Container Sorting and Packaging Facility (CSPF)

This is the Container Sorting and Packaging Facility. It measures 40 foot long by 28 foot wide. Some wall and ceiling panels contain Plexiglas® windows for viewing and external lighting purposes. The concrete floor of LSA-4 serves as the floor of the Container Sorting and Packaging Facility. This facility was designed to sort, segregate, and repackage Low Level Waste and Low Level Mixed Waste. It is also used to sort mixed and non-mixed wastes and to inspect container contents. The Container Sorting and Packaging Facility consists of a sorting room, drum/box load in room, drum load-out room, and two airlocks. The sorting area houses a lift-and-tilt table to elevate and tip containers, a sorting table with liquid catch basin, drum roller, and an overhead bridge crane. Adjacent to the Container Sorting and Packaging Facility is a stand-alone blower room that houses the ventilation system and other components essential to sorting operations. The ventilation system consists of a double-stack 2,000-cfm system with two nominal 1,000-cfm blowers. The filter housings are manufactured from stainless steel, adequately reinforced to withstand a negative or positive gauge pressure of 10" of water. The locally mounted stack penetrates the LSA-4 weather structure before discharging ventilation air to the atmosphere.

#### Waste Packaging Area

This is the Waste Packaging Area. It was designed to assist in the sorting of waste boxes and drums. It measures 40 foot long by 56 foot wide. It has 5 airlocks (used for waste in, waste out, waste to and from the Container Sorting and Packaging Facility, and two for personnel entry). The Portable Ventilation Units for this facility are located outside LSA-4. The facility contains box tippers, sorting areas, a drum crusher, a weigh station, a box inspection area, a walk behind forklift, a clip and lid removal station, and an air compressor and purification skid.

**53. → Enter LSA-3 through the covered passageway and point out waste storage.**

#### Lag Storage Area - 3 (LSA-3)

This is LSA-3. It is used for the storage of Low Level Waste and mixed wastes. The LSA-3 measures about 291 foot long by 88 foot wide by 40 foot high.

**53a. Exit LSA-3. Point out Old/New Hardstand**

#### Old / New Hardstand Storage Area

The area to your near right is the Old / New Hardstand Storage Area. Under NFS, this area was used for radioactive equipment storage. The Old Hardstand was removed from service in 1984. The New Hardstand was initially used to store radioactive materials and miscellaneous Low Level Waste. It is now used for storage of low-level non-liquid radioactive waste. The Old Hardstand was a 150 foot by 150 foot paved asphalt pad slightly elevated above the surrounding ground surface, located west of LSA 3 and 4. The pad and some soil were removed and used as backfill for Lagoon 1 in 1984. The New Hardstand was built in 1986 in the same general area as the Old Hardstand, but as a compacted gravel pad.

**53b. Walk a short distance down and point out LSA-2 Hardstand. Look inside LSA-1 and LSB. Exit LAG system**

Lag Storage Area - 2 (LSA-2) Hardstand

The area before you is the LSA-2 Hardstand. It is used for the storage of Low Level Waste and mixed waste. The hardstand is 8 inch of crushed stone covering an area of 65 foot by 200 foot.

**53c. Walk towards the SSPF and look inside LSA-1 and LSB.**

Lag Storage Area -1 (LSA-1)

This tent is Lag Storage Area -1. It was used to store boxed radiological wastes. Lag Storage Area 1 measures 191 foot long by 55 foot wide by 23 foot high. The floor is compacted gravel with a concrete pad aisle way.

Lag Storage Building (LSB)

This structure is the Lag Storage Building. It is used for the storage of Low Level Waste, Transuranic mixed wastes, and PCB wastes. It is an engineered metal structure that is supported by a clear-span frame and is anchored to a 140 foot long by 60 foot wide concrete slab foundation. A concrete curb encloses the inner perimeter.

**54. → Walk to SSPF.**

Sample Storage and Packaging Facility

This is the Sample Storage and Packaging Facility. It is used for the storage and preparation of radiological samples for shipping (for analysis). It is a metal sided structure on a concrete pad, and is located south of the Lag Storage Building.

**54a. → Exit Lag Area via roped boundary in front of SSPF. Turn in tour Lag Facility ED and safety vests and collect general tour EDs from waiting Rad Tech. Rad Tech should also sign the group out of the visitor's log.**

**55. → Walk towards the PVS Building. Point out Mob Pump Vaults and Haz Waste Storage Lockers**

High Level Waste Tank Pump Storage Vaults

These two structures are the High Level Waste Tank Pump Storage Vaults. There are two high level waste pumps stored in steel boxes inside the 50 foot long concrete storage vaults.

Hazardous Waste Storage Lockers

These small lockers to our right are the Hazardous Waste Storage Lockers, used for the storage of hazardous wastes. The lockers are four pre-engineered, steel buildings, measuring 2.4 by 4.6 by 2.4 m (or 8 by 15 by 8 ft) each. They contain a total waste volume of 200 kg (440 lb). Wastes in these lockers are packaged in 208 liter (55 gallon) drums and 19 liter (5 gallon) pails.

**55a. → Enter the PVS Building via the old High Level Waste Transfer System Control Station.**

We must card into this area to avoid setting off a security alarm, so please wait for me to badge us in. Once the door opens, please move through it quickly, as it can only remain open for a few moments.

#### Permanent Ventilation System Building

This is the Permanent Ventilation System Building. This building is located north of and adjacent to High Level Waste Tanks 8D-1 and 8D-2. The Permanent Ventilation Building houses blowers, filters, and associated ventilation equipment which provide negative ventilation for the High Level Waste tanks. It contains a diesel generator and out of service compressors. Additionally, it houses a programmable logic controller that operated the sludge mobilization and wash system. It also provides negative ventilation for the Supernatant Treatment System Support Building, valve aisle, and pipeway during radioactive operations. We are currently standing in the former Control Station for the High Level Waste Transfer System. Through this door are the motor control centers and variable frequency drives for the sludge mobilization pumps and the high level waste transfer pumps.

We will now go next door and walk through the Supernatant Treatment System Ventilation and Supply Building Air Compressor and Standby Diesel Generator Room.

#### **→ Walk back through room and exit through the same door.**

We must now card out of this area to avoid setting off a security alarm, so please wait for me to badge us out. Once the door opens, please move through it quickly, as it can only remain open for a few moments.

#### **55b.→ Exit the PVS Building via the old High Level Waste Transfer System Control Station and enter the STS V&S Building Compressor/Generator Room.**

Again, we must card into this area to avoid setting off a security alarm, so please wait for me to badge us in. Once the door opens, please move through it quickly, as it can only remain open for a few moments.

#### **56. → Walk through the STS V&S Building Compressor/Generator Room and exit through the double doors in the rear and walk up the stairs to enter the STS Building. At the top of the stairs, point out the concrete vaults on the hardstand, storage tent and boxes, east side of WTF, and CPC-WSA.**

#### Vitrification Vault and Empty Container Hardstand

From this location we have a good view of a few other areas. Directly before you on the other side of the road and extending to the left is the Vitrification Vault and Empty Container Hardstand. It is used for the storage of radiological waste from Vitrification Facility and Process Building decontamination and deactivation activities and as an empty container storage area and nuclear criticality staging area. The hardstand is a compacted gravel pad containing 4 pre-fabricated concrete vaults to contain packaged Low Level Waste and Remote Handled-Transuranic wastes from decontamination and deactivation of the Vitrification Facility and Main Plant Process Building. The two storage vaults for the High Level Waste tank mobilization pumps are also considered to be part of this larger hardstand.

### Chemical Process Cell Waste Storage Area (CPC-WSA)

Beyond the Vitrification Vault and Empty Container Hardstand, away to the north, is the Chemical Process Cell Waste Storage Area (CPC-WSA). It is used for the storage of packaged radiological wastes from the Chemical Process Cell and mixed wastes. It is 65 foot long by 201 foot wide by 25 foot high single level steel frame metal Quonset-type building sitting on a gravel pad. An interior view of that facility was shown during the tour overview presentation.

### Waste Tank Farm

We are now standing in the Waste Tank Farm. It was historically used for the storage of liquid high level waste from fuel reprocessing operations. Under the West Valley Demonstration Project, the Waste Tank Farm was used for the storage and treatment of liquid high level waste feeds for the Cement Solidification System and the Vitrification Facility. There are two 750,000 gallon carbon steel tanks (8D-1 and 8D-2) in separate concrete vaults equipped with leak detection equipment. There are also two 15,000 gallon stainless steel tanks (8D-3 and 8D-4) sharing a third concrete vault. An underground pipe trench and four pump pits containing waste transfer lines; pumps; and valve pits which connect the Waste Tank Farm with the Vitrification Facility. There are out-of-service condensers located outside of the equipment shelter in the southern portion of the Tank Farm. Inside the Equipment Shelter there are out-of-service ventilation blowers, filters, and associated ventilation equipment. There are two structural steel truss bridges spanning across the top of Tank 8D-1 and three truss bridges across 8D-2. These truss bridges support tank mobilization pumps, associated structures and equipment. Additionally, the Waste Tank Farm contains a Permanent Ventilation Building (through which we just passed), enclosures, storage tents, containment structures, generators, fuel oil tanks, and walkways.

We will now enter the Supernatant Treatment System Building.

### **57. → Walk into the STS Building. Move into column loading area.**

### Supernatant Treatment System Support Building

The Supernatant Treatment System Support Building supported the treatment of the Tank 8D-2 supernatant through ion exchange columns located in Tank 8D-1. The treated supernatant was then transferred to the Liquid Waste Treatment System. It is a concrete block and metal siding structure, located adjacent to, and above, Tank 8D-1. This two-story structure contains equipment and auxiliary support systems needed to operate the Supernatant Treatment System.

We are currently standing in one of two Column Loading Aisles which were used to load sand and treatment media into the columns in 8D-1 through these ports.

### **58. → Move past the PCM area to the top of the STS Valve Aisle Steps.**

We will be heading into the Supernatant Treatment System Valve Aisle in the lower level of this building. At the bottom of these stairs is an airlock. There is room for only a few people at a time in the airlock, so we will enter in small groups. Once in the airlock, each group must close the first door completely before opening the second to make sure negative pressure is maintained. If both doors are open at the same time, a security alarm will be activated.

### **59. → Walk down steps to STS valve aisle.**



This is the Supernatant Treatment System Valve Aisle. In the valve aisle, as you can see, there are four shield windows and seven remote manipulators. The manipulators were used to remotely operate Supernatant Treatment System valves and equipment. There is a hatchway in the southwest end of the aisle that connects this aisle to the floor above for equipment changeout.

We must exit this area the same way we entered; in small groups. Please proceed to the top of the stairs. We will pass through the Personnel Contamination Monitor there. If you have anything requiring a hand frisk, please let me know.

**60. → Walk back up steps, exit through PCM.**

We must card out of this area to avoid setting off an alarm, so please wait for me to badge us out. Once it opens, please move through the door quickly, as it can only remain open for a few moments.

**61. → Go down the stairs and walk across to the RHWF Receiving Area (make prior arrangement with Shift Supervisor for entering)**

### **Remote Handled Waste Facility**

The building we are currently walking to is the Remote Handled Waste Facility. It was designed to process remote handled wastes, including Low Level Waste, mixed Low Level Waste, Transuranic waste and mixed transuranic waste. It is a new concrete and steel shielded building completed in 2004. It includes equipment for processing, packaging, characterization, and shipping of remote handled wastes.

We are going to enter the facility via the Receiving Area and will stop just inside the door for a few moments. We will then exit the facility and reenter in the north east stairwell.

**62. → Go into the RHWF Receiving Area**

This is the Receiving Area. The Receiving Area is approximately 27 feet wide by 52 feet long, is primarily used for unloading waste transport vehicles, and allows an uncoupled full length trailer to be parked inside. The floor level of the Receiving Area is 4 feet below the Buffer Cell floor. This allows containers to be transferred into the Buffer Cell using the Receiving Area roller conveyor which is in alignment with and at the same elevation as the Buffer Cell roller conveyor. Currently, the Receiving Area roller conveyor has been removed and placed in storage. A 20-ton bridge crane is provided in the Receiving Area. Sliding equipment doors, one horizontal swinging contamination control door, and one air control door, notched to clear the crane rails, separate the Receiving Area from the Buffer Cell. Steel grating platforms are provided for maintenance of the 20-ton bridge crane. Utility air, utility water, and electrical power are provided in the Receiving Area.

**63. → Exit the Receiving Area. Stop adjacent to the Air Cleaning Unit Fan Room.**

### **Exhaust Ventilation Blower Room**

The Exhaust Ventilation Blower Room is located directly adjacent to the exterior face of the Remote Handled Waste Facility north wall. The HVAC exhaust stack, anchored to the north side of the Remote Handled Waste Facility, penetrates the roof and has a top elevation of approximately 165 feet. The Exhaust Ventilation Blower Room provides an isolatable space for the blowers that pull air from the Work Cell through the High Efficiency Particulate Air filters, and houses other exhaust air system equipment such as motors, dampers, and exhaust filter test equipment.

Each ex-cell filter train housed in the Exhaust Ventilation Filter Room is connected to the blowers in the Exhaust Ventilation Blower Room. The outlets for the two blowers (one operating, the other typically in standby) are connected to the HVAC exhaust stack.

**64. → Enter the North Stairs and proceed into the area containing the Air Cleaning Units, or Exhaust Ventilation Filter Room.**

This is the Exhaust Ventilation Filter Room. Here you will see two redundant air cleaning units. Each is appropriately sized to accommodate the air filtration needs of the work cell which lies on the back side of the wall behind the units. The ex-cell air cleaning units contain two arrays of bag-in bag-out high efficiency particulate air (HEPA) filters in series. There are two trains of ex-cell exhaust ventilation system filtration, of which only one is normally in use. A monorail hoist is provided for movement of equipment and consumables (filters).

**65. → Move past the Air Cleaning Units to view the Waste Packaging Area. Exhaust Ventilation Filter Room**

This is the Waste Packaging Area. The Waste Packaging Area is an area 11 foot long by 20 foot wide by 8 foot high. It is located adjacent to the southeast corner of the Work Cell on the first floor of the RHWF. This area is used for transferring filled waste containers out of the Work Cell via the Waste Transfer System.

Transfer ports mounted on top of the Waste Packaging Area provide the physical boundaries necessary to bring material out of the Work Cell. Steel shield doors seal off the rear of the Waste Packaging Area from the Survey and Spot Decontamination Area.

Two manually operated reach rods, used for radiation probe movement and swipe sampling of containers, penetrate the Waste Packaging Area east walls. A separate mechanism is available to assist in drum outer lid placement and fastening. A viewing window allows operators to make visual observations while performing transfer and swipe sampling operations.

Two transfer systems are installed within the Waste Packaging Area using container transport carts mounted on rails. Cart rails extend from the Waste Packaging Area under the transfer ports to the packaging area shield doors. A monorail transfer hoist is installed on the ceiling of the Survey and Spot Decontamination Area

The Survey and Spot Decontamination Area provides is utilized for surveying, spot decontaminating, and overpacking filled waste containers.

A floor drain, which is plugged when not in use, allows washdown of the Waste Packaging Area. Access to the Waste Packaging Area is provided from the Exhaust Ventilation Filter Room, the Radiation Protection Operations Area, and the Load Out/Truck Bay.



**66. → Backtrack to the North Stairs and go up to the third floor. Stop at the top landing and read the following TWO tour stop sections (66 and 67). Obtain and utilize hearing protection at the top of the stairs. Move into the Mechanical Equipment Area.**

We are about to enter the Mechanical Equipment Area. Air compressors are often running in this area, necessitating the use of hearing protection. The combination of hearing protection and air compressor noise may make it difficult for you to hear information in this area, so I will cover the information now for the two stops we will make while here. The first stop is the Mechanical Equipment Area itself. The second stop will be the Contact Maintenance Area – Upper Airlock.

The Mechanical Equipment Area is located on the third level of the RHWF above the Operating Aisle. The Mechanical Equipment Area contains two air compressors and the decontamination system pressurizer. Each compressor has a receiver, dryer, filter, and carbon monoxide monitor and alarm associated with it. The decontamination system pressurizer increases and regulates the pressure supplied to the RHWF decontamination system. Fire protection and utility piping reach this area through a utility chase.

**67. → Move to the Contact Maintenance Area - Upper Level Airlock (Do not try to read this section again while in the Mechanical Equipment Aisle.)**

The Contact Maintenance Area Upper Level Airlock is located at the south end of the Mechanical Equipment Area. The Contact Maintenance Area is approximately 22 foot wide by 15 foot long by 37 foot high. It provides a shielded area adjacent to the Work Cell where personnel can perform maintenance on the cranes, powered dexterous manipulators, and other Work Cell equipment. The Contact Maintenance Area is constructed of reinforced concrete.

The Contact Maintenance Area has two main floor levels: the lower level is located on the first floor of the building, while the upper level is located on the third floor. The reinforced concrete roof includes a weather-tight hatch. In addition to the main floor levels, two intermediate level structural steel grating platforms are provided. Shield doors and air control doors provide a barrier between the maintenance and work area. Personnel access to the first level is provided by a double airlock between the Contact Maintenance Area and the Radiation Protection Operations area. A second double airlock access is provided from this room adjacent to the Mechanical Equipment Area for the upper level.

On the first level, a stainless-steel lined space is provided for liquid waste transfer/recirculation pumps and valves, storage shelves, and a work bench. A floor drain allows drainage of washdown water to the washdown collection tanks, which are located below the floor of the Contact Maintenance area in the Drain Tank Collection Vault. Access to the tank vault is provided by an access hatch. The vault floor and walls are stainless steel lined. The Drain Tank Collection Vault contains the Work Cell Washdown Receiving Tank, Buffer Cell/Contact Maintenance Area Washdown Receiving Tank, and Batch Transfer Tank.

The upper level floor is composed of reinforced concrete in the eastern portion and steel framed construction in the western portion. A slotted opening is provided in the floor to allow maintenance on all sides of the telescoping tubes. The floor at this level is stainless steel lined and has floor drains to capture washdown water. A 5-ton bridge mounted maintenance hoist is located above the bridge.

**68. → Backtrack down the aisle to the North Stairs and down to the north end of the Operating Aisle.**

You are now in the operating aisle. We will also stop at the Buffer Cell viewing window, an operating aisle window and the sample storage window.

The Operating Aisle is a long aisle outside the Work Cell and Buffer Cell on the second floor of the RHWf that provides a clean, shielded space for remotely operating facility equipment. The Operating Aisle has a clear space area approximately 14 feet wide by 98 feet long, and a clear ceiling height of approximately 12 feet. Three shield windows are installed in the Operating Aisle wall. Two of the windows provide views into the Work Cell while a third window provides a view into the Buffer Cell. An additional shield window is provided in the Sample Packaging and Screening Area that permits a view down the entire length of the Work Cell. Operator work stations are available at the two shield windows located in the east Work Cell wall. A frame with a concrete shield plug is provided in the Operating Aisle wall as a port for radiological assay of waste items. Motor control centers and instrumentation cabinets are also located in the Operating Aisle. A roll-up door and loading platform are installed in the east wall leading into the Load Out/Truck. Access to the Operating Aisle is also provided through the north and south stairwells. From the Operating Aisle, access is provided to the Utility Chase and the Sample Packaging and Screening Area

**69. → Move to the Buffer Cell Viewing Window.**

This is the Buffer Cell Viewing Window. The Buffer Cell, which is 22 foot long by 22 foot wide by 37 foot tall, provides a ventilation confinement boundary between the normally uncontaminated Receiving Area and the contaminated Work Cell

The cell is equipped with a powered roller conveyor system and shares the 20-ton overhead bridge crane with the Receiving Area. The powered roller conveyor system employs floor mounted roller units and a motor driven ball screw drive to move waste containers between the Receiving Area, Buffer Cell, and Work Cell.

Personnel access to the Buffer Cell is accomplished on the first level by means of a double air lock located on the east side of the cell. This shielded window allows direct observation of operations within the Buffer Cell. The south end of the Buffer Cell is separated from the Work Cell by sliding shield doors (two levels high), a horizontal swinging contamination control door, and an air control door (notched to clear the crane rails).

A washdown collection trench and drain system is provided in the floor slab running in the north-south direction of the Buffer Cell. The floor of the cell is sloped toward the trench to direct waste liquids, while the trench itself is sloped towards a drain in the south end of the Buffer Cell. The trench is stainless steel lined. The drain hub contains a replaceable stainless steel screen within a cartridge to filter particulates.

**70. → Continue down the Operating Aisle and to the second of two Work Cell Viewing Windows**

The Work Cell is a shielded space approximately 55 foot long by 22 foot wide by 37 foot high. It is 26 feet high to the bridge crane rail supports.

At the south end of the Work Cell are a sliding shield door and an air control door (notched to clear the crane rails) which separate the Work Cell from the Contact Maintenance Area and provide a means for bridge crane passage.

Crane rails, designed for a 30-ton capacity crane, extend the full length of the Work Cell. Two bridge cranes are provided. One bridge crane designed for a 30-ton load is provided with a 30-ton cable hoist. The other Work Cell bridge crane is provided with two telescoping masts, both with 3-ton capacity. The telescoping masts, supported by separate bridge crane trolleys, are capable of utilizing various tools. One 3-ton wall-mounted jib crane with a telescoping mast is also provided and can be moved on a rail along the length of the east cell wall. Various interchangeable tools can be fitted on the powered dexterous manipulators for cutting and grappling. Some of this equipment is hydraulically powered.

The roller conveyor system employs floor mounted roller units and a motor driven ball screw drive. Two adjustable work platforms are installed along the east wall. Two shield windows are installed in the Operating Aisle wall. In addition to the shield windows, close circuit TV cameras and monitors are also installed.

A washdown collection trench and drain system is provided in the floor slab running in the north-south direction of the Work Cell. The floor of the cell is sloped toward the trench to direct waste liquids, while the trench itself is sloped toward its drain at the south end of the cell. The trench is stainless steel lined. The drain hub contains a stainless steel screen within a filter cartridge to remove particulates.

In-cell exhaust ventilation system filter banks are installed within the Work Cell. Each of the four filter banks contains six filter housings, and each filter housing contains one medium efficiency filter and one high efficiency filter.

On the Work Cell wall opposite the Operating Aisle, two 20 foot long by 24 foot high "knock-out" sections allow for the addition of Expansion Modules. Removable stainless steel lined wall panels serve as an inner confinement barrier until an Expansion Module is installed. Shielding for these "knock-out" sections is provided by an externally removable shield wall consisting of reinforced precast concrete sections.

## **71. → Continue down the Operating Aisle and to the Sample Packaging and Screening Area Window**

This is the Sample Packaging and Screening Area. A shield window is installed in this area, as well as a powered dexterous manipulator controller and work station controller. A sample shelf is located in the Work Cell below the sample transfer drawer, which is mounted inside the shield wall. Samples can also be prescreened and counted for gross Beta and gross Alpha activity with counting equipment available in the Operating Aisle. Continuous Air Monitors and Area Radiation Monitors are located in the area.

Before we leave this area, I would like to discuss several other areas of the Remote Handled Waste Facility that we will not be touring today.

### **Office Area**

The Office Area is an extension on the south side of the facility. This area provides a clean, low dose-rate area to perform administrative functions. The Office Area consists of two stories and

contains the shift supervisor's office, crew offices, meeting rooms, a kitchenette, and sanitary facilities.

### **Radiation Protection Operations Area**

The Radiation Protection Operations Area, located on the first floor, is used to analyze swipes taken from the Waste Packaging Area (and other areas of the RHWF as necessary), and to provide other radiological support services as needed.

#### **72. Exit the operating aisle down the south stairs to the PCM.**

We will pass through the Personnel Contamination Monitor to leave this building. As before, if you have anything requiring a hand frisk, please let me know. We must card out of this area to avoid setting off an alarm, so please wait for me to badge us out. Once it opens, please move through the door quickly, as it can only remain open for a few moments.

#### **73. → Exit RHWF. Enter the Load Out/Truck Bay through the South Door**

This is the Load Out/Truck Bay. This area is approximately 60 foot long by 50 foot wide. The long axis of the Load Out/Truck Bay is oriented in the north-south direction. The Load Out/Truck Bay is positioned such that the center bay is aligned with the Waste Packaging Area.

Access to the Load Out/Truck Bay is through three roll-up doors and three personnel doors provided on the north, east, and south sides. One additional roll-up door is provided on the west side for access and movement of waste containers into and out of the Waste Packaging Area.

#### **74. → Exit Load Out/Truck Bay. CALL VAN DRIVER (CJE) NOW (Cell 912-5348 or ext. 4783). Point out Fab Shop, and view of the site looking Southeast.**

We are now heading southeast toward the Vitrification Facility.

#### Construction Fabrication Shop

This is the Construction Fabrication Shop. It has been used for site maintenance and construction support. It is a 40 foot by 100 foot steel building on a concrete foundation. It is currently being used to store equipment for the Remote Handled Waste Facility. It was previously used a fabrication shop during the construction of both the Remote Handle Waste Facility and the Vitrification Facility.

#### **75. → Walk to west side of Waste Tank Farm and over to the Vitrification Facility. Point out Diesel Fuel Oil Building.**

#### Vitrification Diesel Fuel Oil Storage Tank & Building

This building is the Vitrification Diesel Fuel Oil Storage Tank & Building (or Diesel Fuel Oil Building). It is used for diesel fuel oil storage for the Vitrification Facility diesel generator. Within the building is a 7,450 gallon tank located in a below-grade concrete vault. The vault is covered by this metal building; about two stories tall and 15 foot by 22 foot in area.

#### **76. → Enter the Load In/Load Out Facility north door and go up the stairs to the Vit Crane Room.**

### Load In/Load Out Facility

This is the Load In/Load Out Facility, which currently accesses the Equipment Decontamination Room in the Main Plant Process Building. It was used to deliver empty High Level Waste canisters to the Vitrification Cell via the Equipment Decontamination Room and Vitrification Tunnel, as well as removal of Vitrification Facility cell components. It is now primarily used for contaminated equipment removal from the Equipment Decontamination Room and loading waste boxes into intermodals in preparation for shipping. It is a steel-framed building. Its future use will be for load-out of the High Level Waste canisters from the High Level Waste Interim Storage Facility. The foundation and structural steel were designed to support the eventual load out of the high level waste canisters. You will also note that the facility currently contains a 15-ton bridge crane.

### Vitrification Facility

The areas that we will now begin to see are related to the Vitrification Facility. The facility was designed and constructed for the solidification of liquid High Level Waste. It is not currently used. However a contaminated Brokk robotic manipulator is stored in the in-cell pit.

The Vitrification Facility is a structural steel frame and sheet metal building that houses the Vitrification Cell, a Crane Maintenance Room a secondary filter room, a diesel generator room, operating aisles, truck locks, and a control room. The work cell has 6 lead glass shield windows from the cell operating aisles, a closed circuit TV system, an uninterruptible power system, a fire detection and protection systems, and a radiation monitoring system. A 15 foot deep pit located at the north end of the cell, with two sumps. The major cell components have been removed. The cell is supported by several sets of wall mounted manipulators, transfer drawers, a pneumatic sample transfer system, a 25 ton bridge crane with two 4.5 ton hoists, and a bridge crane configured with dual telescoping robotic arms. The cell has transfer cart access from the Equipment Decontamination Room, three primary HEPA filters, and several in-cell lights. There is a shield door accessing the cell from the Equipment Decontamination Room, and one between the crane maintenance room and the cell. There is a hatchway into the cell from the roof and a hatchway between the Equipment Decontamination Room tunnel and the Crane Maintenance Room.

The crane maintenance room has 1 lead glass shield window from the crane maintenance operating aisle, a shield door/airlock accessing the Crane Maintenance Room, a set of wall mounted manipulators, and a 10 ton maintenance crane. The cell ventilation system has two blowers which exhaust air from the cell through the primary and secondary filters up a steel stack.

This is the Vitrification Crane Maintenance Room Operating Aisle. Through this shield window, you can see a crane and robotic arms which can be used in the Vitrification Cell.

**77. → Enter Vit via LI/LO stairs. Tour Vit Facility (Aisles, Control Room) and exit at top of stairs through the west door leading to the catwalk.**

This building is the Vitrification Facility proper. We are going to enter the facility on the third floor and go down one level to the Middle Operating Aisles to allow you to view the Vitrification Cell.

**78. → Go to Middle North Operating Aisle**

These are the Operating Aisles. You are welcome to look through the shield windows in the Middle West Operating Aisle or the Middle North Operating Aisle, but please do not touch anything.

Through this door is the Middle West Operating Aisle. We will now go back down the stairs to the first floor, or Lower Operating Aisles.

**79. → Go to Lower Operating Aisles, exit through Lower West Operating Aisle, past the Radiological Monitoring Room, to the Secondary Filter Room**

This is the Radiological Monitoring Room.

This is the Secondary Filter Room. Do we open the doors to the SFR, and DGR?

This is the Diesel Generator Room. We will now pass back over to the Lower Operating Aisles to go through the Personnel Contamination Monitor and up to the Control Room. If you have anything requiring a hand frisk please let me know.

**80. → Go back to Lower West Operating Aisle, and upstairs to the Control Room**

This is the Vitrification Facility Control Room. Next we will go to the Vitrification Cold Chemical Facility.

**81. → Take the catwalk over to the 2<sup>nd</sup> floor of the Cold Chemical Facility. Stop on second floor, read, script then continue to walk through and down the stairs to exit the Cold Chem.**

Cold Chemical Facility

This is the second floor of the Vitrification Cold Chemical Facility. We will go down the stairs. At the bottom, you can look through the door to see the first floor of the Cold Chemical Facility. This facility houses many cold chemical storage and transfer tanks and pneumatic and steam transfer systems for the vitrification process. It now has no use. The building measures 56 foot by 34. The facility was constructed with a berm for secondary containment. The floor is coated with a vinyl ester resin coating.

**82. → Back in front of the Main Plant Process Building. Offer the opportunity to take a quick break.**

**83. → Point out 01-14 Building, (north door to east room[01-14 cell access], up stairs through each floor, out 4<sup>th</sup> floor door to look out over site)**

01-14 Building

This is the 01-14 Building. Historically, NFS constructed this building in 1970-1971 to replace existing systems. It contained an Acid Fractionator Cell, Off-Gas Treatment Cell (OGT), and iodine removal equipment, but was never used. The WVDP retrofitted the building to support stabilization of the High Level Waste tank supernatant into cement drums. Currently, the Cement Solidification System is configured to support mixed waste solidification (most recently the Sodium Bearing Waste Water). The building also contains the Vitrification Facility Off Gas Treatment System components including heaters, catalytic reactors, three blowers, and HEPA filters.



The building itself measures 41 foot by 33 foot by 60 foot high. The service area outside walls are 12-inch thick concrete block. The building also contains 2 foot thick reinforced concrete shielding walls and pad. This room provides access to the 01-14 Cell. The cell floor is covered by a 1/8 inch stainless steel liner that extends 1 foot 6 inch up the side of the walls. We will walk through each level to allow you to see the remainder of the facility. Through this door you can look out over the southern part of the site.

We will now return to the first floor, passing through the Personnel Contamination Monitor. Remember to notify me if you need to hand frisk anything. Also, please remember to wait for me before heading outside as we must card out of this facility.

**84. → Go to Sodium Bearing Waste Water treatment area (SBW area)**

This is the work area that was used to complete the solidification of the Sodium Bearing Waste Water. Next we will go to the Liquid Waste Treatment System Control Room.

**85. → Go to Liquid Waste Treatment System Control Room and the Cement Solidification System Control Room.**

This is the Liquid Waste Treatment System Control Room and in the back is the Cement Solidification System Control Room. The evaporator and associated Liquid Waste Treatment System equipment was operated from here. In the back of this control room is the former Cement Solidification System Control Room for the mixing and filling of the 19, 877 Low Level Waste square drums. From this area the Low Level Waste drums were transported to the Radwaste Treatment System (RTS) Drum Cell which we will drive by later in our tour.

**86. → Walk around to a point in front of the UR. Point out the Water Storage Tank (large blue tank adjacent to 01-14), the Fire Pump House (red building next to water tank and UR), the Emergency Van Shelter (White Building across walkway from Fire Pump House), and the Cooling Tower (across the road). Enter the UR through south door, walk through and exit the east door and head over to the Equalization (EQ) Basin.**

Fire Pump House

The small red building before you is the Fire Pump House. It provides a shelter for the plant's fire water system pumps and associated equipment and storage for various fire fighting equipment. This facility supports the High Level Waste Interim Storage Facility. It is a steel framework, single story building with corrugated metal siding and roof structure. It has a 6 foot by 6 foot 8 inch double door on the east side in the center of the building. It contains electric and diesel powered fire water pumps, and a Diesel Fuel Oil Day Tank (290 gallon capacity).

Water Storage Tank

The large blue tank to your West is the Water Storage Tank. It can hold 475,000 gallons of treated lake water; 300,000 of which is reserved for fire fighting by means of an internal standpipe level system.

Emergency Vehicle Shelter

The tan-colored structure immediately before you is the Emergency Vehicle Shelter. It contains the site emergency vehicle. It is a 30 foot by 47 foot steel framed structure with corrugated metal siding and a metal roof.

#### Demineralized Water Tank

The silver-colored tank located behind the Emergency Vehicle Shelter to the east is the Demineralized Water Tank.

#### Clarifier

The blue tank with some silver insulation wrapped around it, located just beyond the Demineralized Water Tank is the Clarifier.

Across the road, you can see the Cooling Tower.

Next we will head to the Utility Room. From the Utility Room, we will pass into the Utility Room Extension, past the Switch Gear Room, and back outside.

**87. → Go to the Utility Room and Utility Room Extension. From the Utility Room, to Utility Room Extension, and back outside via east door.**

#### Utility Room

This is the Utility Room. It is considered to be part of the Main Plant Process Building. It supplies utilities to the Main Plant Process Building and to the remainder of the site. It is concrete block and steel framed. It is located on the south end of the Main Plant Process Building. The floor is concrete slab with concrete foundations under individual equipment. The south, east, and west walls are 8 inch concrete block. The north wall is 8 inch concrete. The roof is metal decking with insulation and built-up roofing. This facility contains equipment for supplying various types of water, steam, and compressed air to the plant. In particular, it contains 2 deactivated 150 psi boilers, one standby power generator, one air compressor, pumps for cooling water and boiler feed water, a condensate tank, a demineralizer, sand filters, zeolite softeners, compressed air surge tanks, a potable water tank, chemical feed tanks, and metering pumps for chemical feed. Support equipment located outside includes condensate return tanks, the main water storage tank, the demineralized water storage tank, the water clarifier, fuel oil tank, and the cooling tower.

#### Utility Room Extension

This is the Utility Room Extension. It is considered part of the Main Plant Process Building. It supplies standby electrical power and steam to the plant. It is concrete block on a cement pad. It is located east of the original Utility Room. It contains one generator for supplying standby electrical power, two dual fueled (natural gas and diesel) steam boilers, two air compressors, and a fuel oil day tank.

The door on the left leads outside to the Old Switch Gear Room. As mentioned earlier in our tour, it is the power supply distribution center for the Main Plant Process Building. The new switchgear room to the North contains the Motor control Center for standby and normal power, and the generator switchgear room.

We will now go outside and head toward the Equalization Basin.

**88. → Continue south to the road. Turn left on the road and walk to a point across from the Road Salt and Sand Storage Shed**

#### Road-Salt and Sand Storage Shed



In front of you is the Road-Salt and Sand Storage Shed. This facility is used in support of site grounds maintenance. It is a 20 foot by 22 foot storage bin and sand stall on 51 inch thick blacktop, overlying 10" of stone. The roof is wooden.

**89. → Cross east over the street and stop in front of the Solvent Dike.**

#### Solvent Dike

This is the area known as the Solvent Dike. It acted as a holding pond; receiving radioactive Tri-Butyl Phosphate and n-dodecane contaminated spills, leaks, and roof runoff from the plant Solvent Storage Terrace (SST) via a floor drain and underground piping until it was removed from service in 1987. The Solvent Storage Terrace tanks and piping were removed in 1990. Built in 1966, it measured 40 foot by 50 foot by 4 foot and was roughly D-shaped. It was a bermed, unlined basin partially installed in the Sand and Gravel layer 200 foot east of the Main Plant Process Building and 80 foot north of the north demineralizer sludge pond. The original design had no outlet, but relied on evaporation or seepage to underlying soil to reduce its contents. Low-level radiological sediments were excavated from this area in 1987. Then the area was backfilled. It currently has no use.

**90. → Continue down the EQ Basin road to a point adjacent to the Blue shed located on the West side of the road labeled as B-UT-05.**

#### Demineralizer Sludge Ponds

The former Demineralizer Sludge Ponds are located in the area directly behind these bushes to your West. They received backflush solutions from the plant process water demineralizer, softener, and clarifier. They have been inactive since 1994. They were originally constructed between 1964 and 1966. The Sludge Ponds included 2 unlined ponds located approximately 150 foot southeast of the Main Plant Process Building and due east of the Road-Salt and Sand Storage Shed. Each measures 50 foot by 100 foot by 5 foot deep, with the east end slightly deeper than the west. There was a headwall and drain pipe located at the east end of each. They discharged through a weir box and underground piping to State Pollution Discharge Elimination System-permitted outfall 005. They are typically wet and vegetated.

This area contains the Equalization Basin and Equalization Tank associated with the Wastewater Treatment Facility, commonly called the Sewage Treatment Plant.

**91. → Move to the north side of the EQ Basin, adjacent to the EQ Tank.**

#### Equalization Basin

The Equalization Basin, or Effluent Mixing Basin formerly received Utility Room liquids (e.g. clarifier blowdown) and treated sewage flow diverted from the Waste Water Treatment Facility, should an upset occur in the Waste Water Treatment Facility. It now receives clarifier blowdown (serving as a replacement for the demineralizer sludge ponds). It was constructed in 1985. It is a 50 foot by 125 foot by 6 foot deep basin with a Hypalon® liner, excavated into the Sand and Gravel layer, and underlain by a sand drain. It is located east of the Demineralizer Sludge Ponds (or approximately 300 foot east of the old warehouse and 650 foot southeast of the Main Plant Process Building.

#### Equalization Tank (Underground) labeled as 34-D-20)

The Equalization Tank receives cold Utility Room wastewater (e.g. sand filter backwash, the alkaline part of the demineralizer regeneration, and clarifier blowdown). It is a covered 20,000

gallon underground concrete tank that serves as the replacement to the Equalization Basin. It is located just north of the Equalization Basin.

**92. → Move to the southwest corner of the EQ Basin. Gesture up the hill toward the Test Towers while talking.**

#### Waste Tank Farm (WTF) Training/Test Platforms

From here, you can also see the Waste Tank Farm (WTF) Training/Test Platforms to the west. The Waste Tank Farm (WTF) Training/Test Platforms were used to conduct mock-ups, testing, and training for long pumps and equipment destined for installation and use in the High Level Waste Tanks. They have no current use. The south tower measures 16 foot by 16 foot by 57 foot high and the north tower 16 foot by 16 foot by 48 foot high. They are both pre-engineered steel structures.

**93. → From Equalization Basin, go back down the road to the north. Proceed to the east side of the Main (old) Warehouse.**

#### Old Warehouse

This building to our left is the Old Warehouse. It is used to store spare parts, operating supplies, chemicals, construction materials and clean plant equipment not currently in use. It formerly held old records, engineering drawings and records, as well, in the northernmost section. That part of the structure (measuring 40 foot by 32 foot by 12 foot ) was also used as a carport, lunch, and conference room by NFS. It currently serves as a Counting Lab. The Warehouse is a corrugated metal building with steel frame. The floor is concrete slab. There are 3 small rooms (approximately 10 foot by 10 foot each) partitioned off for office space, sensitive supply storage, etc. inside. There is a 10 foot by 14 foot shipping and receiving dock on the west side, and a rail siding on this eastern side. It is insulated and heated with gas space heaters. The building is protected by a dry type sprinkler system supplied by the fire protection main. Some overflow material is stored in a loft over the office area. The main space measures 80 foot by 144 foot . The total volume of useful space is approximately 100,000 cubic foot inside with dock space for 10,000 cubic foot and an outdoor fenced area with 10,000 cubic foot.

#### Waste Paper Incinerator

The Waste Paper Incinerator formerly sat in this vicinity on the east side of the Old Warehouse. It was used to incinerate paper and packaging waste. It was mounted on a concrete pad. The incinerator operated from 1970 to 1985. Incinerator ash was routinely disposed of in the Construction and Demolition Debris Landfill. The air permit expired in 1990. The unit was padlocked and sealed in 1991. It was removed from this location, disassembled, and placed in on-site storage in 1996.

#### Counting Lab

This is the northern section of the Old Warehouse mentioned just a moment ago. Under the WVDP it transitioned from housing blueprint reproduction services to a Radiological Protection Counting Lab. Like the warehouse, it too is corrugated metal with steel frame.

**94. → Move down the east side of the Main (old) Warehouse to enter the waiting van. Drive north to the road. Turn left (west) and then left between the Old Warehouse and the Cooling Tower. Pause just past the cooling tower, adjacent to the Old STP.**

#### Old Sewage Treatment Plant Facility

Just to your right in those vaults is the area that once served as the Old Sewage Treatment Plant Facility. This sanitary wastewater treatment facility was removed from service in 1985. The discharge lines were removed and influent lines capped. It now has no use. The facility was located below grade inside this 12 foot by 22 foot area south of the Cooling Tower. It consisted of a concrete basin (5000 gallon/day capacity), control boxes, a surge tank, an aeration tank, and a clarifier. There was a three compartment unit to treat raw sewage by an aeration process. Major components included: a bar screen and cutting device, an aeration tank, and a settling tank. Effluent flowed from the settling tank via an adjustable weir plate on the south side of the unit to an outfall ditch.

**95. → Move across the road and stop just before the Above-Ground Petroleum Tanks, adjacent to the Warehouse Bulk Oil Storage Unit.**

#### New Warehouse (Main-2 Warehouse)

The large building to the right is the New Warehouse, or Main-2 Warehouse. It was used for materials storage. It also contained a 90-Day storage area for hazardous wastes, industrial wastes, and materials, batteries, and recyclables. It is a steel building that rests on concrete piers and a poured concrete foundation wall. It measures 80 foot by 250 foot by 21.5 foot high. It is currently empty.

#### Warehouse Bulk Oil Storage Unit

The small white building in front of the Main-2 Warehouse is the Warehouse Bulk Oil Storage Unit. It is used to store combustibles (i.e., grease, oils, antifreeze, etc.) in 1 gal to 55gal containers. It is a metal, insulated wall structure with inside measurements of 11 foot by 23 foot by 6 foot 6". The walls are insulated with a 2 hour fire rating. The doors have a 1.5 hour fire rating. The floor has a removable fiberglass grating located 6" above a catch basin with a sump. For your orientation purposes, it is located east of the Main-2 Warehouse.

#### Above-ground Petroleum Tanks (Tanks 41-D-021 and 41-D-022)

Just to the left of the Warehouse Bulk Oil Storage Unit, stands a pair of above-ground Petroleum Tanks (Tanks 41-D-021 and 41-D-022). They are used for fuel storage. They are concrete vaulted steel. There is a 2000 gallon gas tank and a 1000 gallon diesel tank. Like the vault, the overfill catch basin is also concrete.

**96. → Move just beyond the petroleum tanks and pause just before the WWTF driveway.**

#### Product Storage Area

On the south end of the Old Warehouse, you can see the area referred to as the Product Storage Area. It has been used in the past for the staging of containerized raw materials and temporary storage of nonhazardous debris. It is currently used only for the temporary storage of nonhazardous debris. It is an open air storage area on an asphalt pad, measuring approximately 20 foot by 60 foot, and located adjacent to the eastern half of the southern end of the Old Warehouse.

#### Waste Water Treatment Facility

This building is the Waste Water Treatment Facility. It has been used for the treatment of sanitary wastewaters since 1985, and industrial wastewater since 1994. It is an approximately 55 foot by 105 foot corrugated steel building. The walls and floors are 8 inch reinforced concrete. The facility provides biological treatment (10,000 gallon/day average) of sanitary wastewater. Following biological treatment, effluent is disinfected by chlorination. The facility

consists of 6 grinder stations, an aeration tank, a clarifier, and a baffled tank for chlorination and dechlorination. An upgrade in 1994 allowed the facility to handle non-radiological wastewater treatment.

**97. → Travel to the south past the WWTF. Stop adjacent to the WMSA driveway.**

Warehouse Extension Staging Area or Waste Management Staging Area

Just beyond, or east of, the Waste Water Treatment Facility, you can see the Warehouse Extension Staging Area, or Waste Management Staging Area (WMSA). This area provided temporary storage of nonhazardous wastes and equipment and used products storage. It now houses industrial wastes, hazardous wastes (90-day), and universal waste. It is an approximately 50 foot by 80 foot steel building with a concrete floor located off the southern end of the New (Main-2) Warehouse. Two sides of the staging area are bermed.

**98. → Drive south to a point adjacent to the Vitrification Hardstand and stop.**

Expanded (or Environmental) Lab Complex

Up the hill, you can see the Expanded (or Environmental) Lab Complex. This complex contains office space and allowed for vitrification cold sample analysis and environmental sample analysis. It is a 92 foot by 50 foot sheet metal structure, including 3 double-wide trailers on a concrete foundation. The complex also includes several supply and storage sheds.

Vitrification Hardstand

The area to your left alongside the road is referred to as the Vitrification Hardstand. It was historically used for the staging of nonhazardous melter refractory bricks and nonradiological vitrification test glass and equipment. It has been inactive since 1993. It most recently held office trailers, but is now unused. It is an approximately 150 foot by 220 foot flat gravel pad.

Meteorological Tower

The site Meteorological Tower can be seen in front of you as you look south. The original tower, erected in October, 1974 to collect wind direction, wind speed and temperature data was demolished in the 1990s. Two new towers were constructed in the early 1990s to serve the same purpose. This tower, located on-site is a 197-foot (or 60-meter) tower that continuously monitors wind speed, wind direction, and temperature at both the 197-foot and 33-foot (10-m) elevations. An independent, remote 33-foot (10-m) tower located approximately 5 miles (8 km) south of the site on a hillcrest on Dutch Hill Road, continuously monitors wind speed and wind direction. Dew point, precipitation, and barometric pressure are also monitored on-site. Both locations supply data to primary digital and analog data acquisition systems located within the Environmental Laboratory. On-site systems are provided with either uninterruptible or standby power in case of site power outage.

**99. → Continue south to the first Warehouse Hardstand.**

Warehouse Hardstand

To your left is the first of two Warehouse Hardstands used for the temporary storage of materials, including a few canisters of Vitrification Test Glass.

AA Hardstand

The area to your right alongside the road is referred to as the AA Hardstand. It has historically been used for the staging of excess new and clean equipment, building materials, and office furniture

**100. → Travel east and stop adjacent to the Subcontractor Maintenance Area and Warehouse Hardstand Tent.**

Subcontractor Maintenance Area

The area to your South is referred to as the Subcontractor Maintenance Area. It was historically used for the cleaning of asphalt paving equipment under NFS and until 1991. Since 1991, it has been used for staging heavy equipment and inert construction materials. It is a flat area located west of the Rail Spur, east of the on-site meteorological monitoring tower, along the south side of the roadway. It is compacted stone, and contains several trailers, storage areas, and equipment.

Second Warehouse Hardstand and Warehouse Hardstand Tent

To your left is the second Warehouse Hardstand, including the Warehouse Hardstand Tent. The tent measures 50 feet by 60 feet and is used to protect excess warehouse stock and inventory. The entire area is used for temporary materials storage.

**101. → Travel east and stop adjacent to the Rail Packaging and Staging Area.**

Rail Spur

The 1.6 mile Rail Spur connects the site to the Buffalo and Pittsburgh (B&P) Railroad Line south of the site. There is a siding switch and extra spur on the east side of Old Warehouse. The rail line extends through the Fuel Receiving and Storage Facility. Reinforcements and repairs were made to the spur near the Lake 1 Dam and several other locations by WVDP to support spent nuclear fuel and waste shipping. The rail spur is currently operational.

Rail Packaging and Staging Area

On your left is the Rail Packaging and Staging Area. As the name implies, this is primarily a staging area for waste packages destined for off site transportation via rail.

**102. → Cross over the rail spur and stop at the southwest corner of the NDA, facing down the road along the south side, toward the SDA.**

NDA Trench Soil Container Area

The area on the right side of the road directly in front of us, and along the left side of the road to our left, is called the Nuclear Regulatory Commission Licensed Disposal Area (or NDA) Trench Soil Container Area. It was, and is, used as a staging area for Low Level Waste and contaminated soil roll-offs. The soil roll-offs were from the NDA Interceptor Trench project. The area consists of two gravel pad areas located south and west of the existing roadways adjacent to the NDA.

NDA Hardstand/Staging Area

At the far, or east, end of the road directly in front of you is the NDA Hardstand/Staging Area. It was used for the staging of radiological wastes prior to burial in the NDA until 1989. It is no longer used. It is three-sided with cinderblock walls, and located on a sloped pad of crushed rock with crushed concrete. It is currently overgrown.

### State Licensed Disposal Area

Behind that hardstand, you can see the State Licensed Disposal Area. The State Licensed Disposal Area was operated by NFS for New York State. It was last operated in 1976. The State Licensed Disposal Area is under the control of New York State and is not part of the WVDP.

### Nuclear Regulatory Commission Licensed Disposal Area (NDA)

As we drive, to your right is the Nuclear Regulatory Commission Licensed Disposal Area. It is an Inactive Waste Site (IWS) formerly used for the disposal of Low Level Waste generated by NFS during the commercial fuel reprocessing activities. It was used by the Department of Energy in during the early 1980's during the original decontamination activities conducted as part of the WVDP. It is 370 foot by 600 foot (approximately 5 acres) and contains both deep and special holes used by NFS, and trenches and caissons used by the WVDP. This area also includes various support buildings and equipment and a former lagoon.

**103. → Drive north around the NDA to IWSF driveway.**

### Liquid (or Leachate) Pretreatment System

The Liquid (or Leachate) Pretreatment System is located inside that building in the corner. The Liquid Pretreatment System (LPS) is a standby system for treating water from the Nuclear Regulatory Commission-Licensed Disposal Area interceptor trench, should it test positive for organic compounds. It has not been used, with the exception of one tank which was used during an NDA tank removal project. The liquid pretreatment system consists of 7 tanks made of carbon steel to remove organics. The building is of steel frame and is located in the northeast corner of the NDA.

### Interim Waste Storage Facility

This facility is the Interim Waste Storage Facility. It has also been called the Kerosene Tanks and NDA Container Storage Area. It was formerly used for the staging of Low Level Waste prior to sampling and disposal. It is now used as interim storage for Low Level Waste and Low Level mixed waste. It is a 36 foot by 36 foot pre-engineered metal structure anchored to a concrete slab with a curbed perimeter. It is located west of the Liquid Pretreatment Building on the NDA, and partially overlies the former NDA Lagoon footprint.

**104. → Drive back around the NDA and stop adjacent to the Rail Packaging and Staging Area.**

### Radwaste Treatment System (RTS) Drum Cell

The large building in front of you is the Radwaste Treatment System (RTS) Drum Cell. It was originally designed for the storage and disposal cell for solidified Low Level Waste drums from the Supernatant Treatment System/Cement Solidification System. The RTS Drum Cell currently contains 19,877 of these drums. The facility is a 375 foot by 60 foot steel frame and metal sided building on a concrete base pad. It contains a shielded concrete enclosure that can accommodate a maximum of 21,500 71-gallon square drums. The berm and floor are coated with epoxy. It is equipped with a remote operated crane and a closed circuit TV system. It is located south of the Nuclear Regulatory Commission Licensed Disposal Area and the adjacent portion of the Nuclear Regulatory Commission Licensed Disposal Area Trench Soil Container Area.

This completes the tour of the West Valley Demonstration Project. We will now be returning to the Administrative Building to retrieve any items your may have left.

- 105. Turn around and Return to the Main Gatehouse.**
- 106. Exit through the Main Gatehouse. Escort to the DOE Conference Room.**
- 107. Return to Main Gatehouse, sign out.**